

MAY 2016

THE LEADING MAGAZINE FOR ENDOCRINOLOGISTS

Endocrine news

BREAKING news

ENDOCRINE SCIENCE AND ITS IMPACT ON BONE HEALTH

- **Growth Hormone & Osteoporosis:** This treatment could be a breakthrough to reducing fracture risk and improving osteoporosis outcomes.
- **Fracture Liaison Services:** If this care model can help reduce future breaks and significantly lower costs, why are there so many obstacles keeping it from being implemented?

LAB PARTNERS:

The Katzenellenbogens:
Teaming up in the lab and in life

YOU SHOULD'VE BEEN THERE:

What you missed at ENDO 2016 in Boston

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ENDOCRINE BOARD REVIEW**

2016

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CLINICAL ENDOCRINOLOGY UPDATE
SEPTEMBER 8-10, 2016

ENDOCRINE BOARD REVIEW
SEPTEMBER 11-12, 2016

WASHINGTON STATE CONVENTION CENTER
SEATTLE, WA

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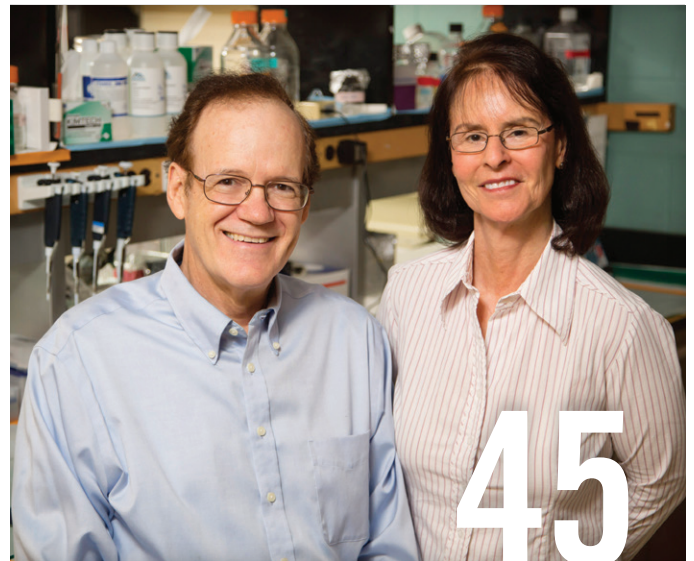
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Introducing the New President: Henry M. Kronenberg, MD

THE ENDOCRINE SOCIETY IS PLEASED TO welcome its president for 2016 — 2017, Henry M. Kronenberg, MD, who took office April 1. An investigator at Massachusetts General Hospital and a professor of medicine at Harvard Medical School, his work specializes in studying signaling by the PTH/PTHrP receptor in bone. His clinical interests include calcium and bone disorders.

“I am both excited and apprehensive [about being elected president of the Endocrine Society],” Kronenberg says. “Excited because it sounds like a very full and wonderful experience. On the other hand, it’s also quite overwhelming in terms of amount of time and responsibility associated with it; it’s a bit daunting. My approaches to it are slightly nervous, but quite excited.”

Kronenberg follows Lisa H. Fish, MD, as the Society continues its rotation of presidents who represent its core constituencies: basic researchers, clinical researchers, and clinical practitioners. Kronenberg has been a basic researcher for almost 50 years. He received his medical degree from Columbia University, graduating in 1970. “I always wanted to be a doctor because I like the idea of using science to help people,” he says. “I found internal medicine the most straightforward way to combine both my interests in taking care of people and using and understanding science to do so.”

Kronenberg became interested in endocrinology around the time recombinant DNA was discovered; this was the era in which, for the first time, genes could be identified as biochemical entities, and their regulation was something that could be studied. “It seemed like a very exciting way to be thinking about biology, medicine, and disease,” he says. “So I wanted very much to be involved with studying how genes are regulated in ways that could help diagnosis and treatment of diseases. At the time, that seemed to be the secret of life.”

“
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At that time, Kronenberg says, there were only two subspecialties of medicine in which this new discovery could be applied in a straightforward way: hematology and endocrinology. Kronenberg completed his endocrinology fellowship training at Massachusetts General Hospital, where he still is. Endocrinology, he says, seemed like a good field for studying how genes are regulated, since endocrinology is all about regulatory pathways across the whole body. “And certainly over the next decade or two, endocrinology remained fairly uniquely at the forefront of both genetic understanding and the application of that,” he says. “So that was the driver that got me to think I should focus on endocrinology.”

Kronenberg first joined the Society nearly 40 years ago, when he first presented at the annual meeting. “The reason I became a member is because I was an endocrinologist and I wanted to present



PRESIDENT'S VIEWPOINT

my research,” he says, “and it was the major endocrine meeting in the world.” He says that he joined without second thought, since he considered joining the Society an essential part of his career. In order to let people outside his institution know about his work, the Endocrine Society was the way to do that.

Kronenberg's early involvement with the Society was mostly just attending the meetings and reading the journals. By the late 1980s, he was asked to join the Program Committee, now called the Annual Meeting Steering Committee, which gave him the chance to think about the scope of the annual meeting. After that, he was involved with the Society's Molecular Research Course, which ran from 1994 to 1998, chairing the committee that oversaw the course and remaining active on the faculty that ran the committee when he wasn't the chair.

In the mid-1990s, molecular research was being actively pursued by many institutions, but it was still a relatively new field of study, so the Endocrine Society was on the forefront of providing training to researchers studying things like recombinant DNA and gene regulation. By 1998, everyone else had caught up with this revolution, so the Society sunsetted the course. “There was no need for the Endocrine Society to be providing a formal, several-day course,” Kronenberg says. “It was something, at that point, people were learning in graduate school and medical school.”

Kronenberg says that course, as well as his involvement with the self-assessment (ESAP) courses from 1997 to 2004, and his time on the council from 1998 to 2001, bonded him to the Society and provided insight into the clinical part of his profession, as well as giving him a broad overview of the Society itself. He served as the vice president for basic science in 2005, as well as on the Awards Committee, which he says was particularly satisfying, “because you become very aware of how many incredibly accomplished people there are in the Society.”

“
[Serving on the Society Awards Committee... was particularly satisfying], because you become very aware of how many incredibly accomplished people there are in the Society.
”

Kronenberg makes it clear that, as president, he is only one part of something larger when it comes to advancing the Society over the course of the year. His presidency coincides with a time when the Society's two major functions — the annual meeting and the journals — are going through some important changes. For example, the Society is launching the *Journal of the Endocrine Society*, which will be its first Open Access journal that's fully online, with a global perspective. (For more on the OA journal, see page 42). And recently, the ENDO Task Force concluded that while the annual meeting

is a very successful meeting, there are some things that could benefit from change, for example, finding ways to increase the sense among basic scientists that ENDO is an essential meeting to attend. ^{EN}



Be sure to follow *Endocrine News* on Twitter at @Endocrine_News for news, announcements, and links to web exclusives at www.endocrinenews.org.

NEW BOOK

A Biographical History of Endocrinology

By **D. Lynn Loriaux, MD, PhD, Oregon Health and Science University**

Discover the history of endocrinology from Hippocrates to modern times, narrated in short, engaging vignettes.

Discover intriguing facts behind key innovations in endocrinology:

- How was the commercial production of androgens, estrogens, progesterone, and glucocorticoids first made possible?
- Who gave us the first accurate description of diabetes?
- How did watching a sword swallower inspire Kussmaul to discover the first endoscope?

“This book is a wonderful, enjoyable companion for your bedside reading and a gift your colleagues will treasure.”

— R. Paul Robertson, MD, Editor-in-Chief,
The Journal of Clinical Endocrinology & Metabolism

A BIOGRAPHICAL HISTORY OF ENDOCRINOLOGY

D. Lynn Loriaux

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FROM THE **EDITOR**

Society Publications Blaze a Brand New Trail

THERE'S SOME EXCITING NEWS HAPPENING AT THE ENDOCRINE Society. It seems our publishing portfolio is blooming quite prolifically — the Society is launching a brand new scientific journal called the *Journal of the Endocrine Society (JES)*. Aside from it being the first new journal we've launched since Ronald Reagan was in the White House, *JES* is going to be an Open Access (OA) journal, an exciting new trend in scientific publishing. We talk about it more in-depth on page 42 ("Brave New World: Introducing the *Journal of the Endocrine Society*"), but *JES* will be remarkably different from the other Society journals: Even though the content will be thoroughly vetted and reviewed by experts, access to it will be absolutely free for everybody, inside and outside the membership rolls of the Endocrine Society. And with Society past-president Larry Jameson, MD, PhD, executive vice president of the University of Pennsylvania for the Health System and dean of the Perelman School of Medicine at the University of Pennsylvania, as the editor-in-chief, *JES* will no doubt quickly become a relevant force in furthering the reputation of endocrinology and endocrine science, as well as the Endocrine Society.

As we continue through the Year of Endocrinology, May is devoted to raising awareness about osteoporosis and bone health. *Endocrine News* tackles the interesting topic of fracture liaison services (FLS) in "Fracture Liaisons: A Proven Approach to Reducing Future Breaks" (p. 24) by Eric Seaborg. In short, these services make sure that patients who have broken a bone get much-needed follow-up in order to reduce future breaks. In the article, Seaborg writes that one of the reasons fracture patients don't receive follow-up is because the treatment crosses a variety of specialties — from orthopedists to endocrinologists — and while many approaches have tried to bridge this gap, experience has proven that FLS is the only one with proven, tangible results.

In "Breaking News," (p. 18) Kelly Horvath discusses the findings from *The Journal of Clinical Endocrinology & Metabolism* that discovered the usefulness of growth hormone (GH) in treating osteoporosis patients, a potential game changer. Unfortunately, using GH in this manner has its limitations, such as cost and overall practicality. "If GH could exist in a long-acting preparation, so that it could be given once a week or once a month, then it could be of interest for osteoporosis patients," says the study's lead author Emily Krantz, MD, of Södra Älvsborgs Hospital in Borås, Sweden.

If you were not able to attend **ENDO 2016** in Boston last month, don't worry; we have assembled our own "highlight reel" of what you missed in "ENDO 2016: A Centennial Celebration" on page 31. Most of the "heavy lifting" is performed by associate editor Derek Bagley, but we've also gathered comments from various members about what impressed them the most this year. From basic and clinical scientists just embarking on a career in endocrinology to veteran physicians and educators always willing to share their knowledge, **ENDO 2016** was a true melting pot of the best and brightest that the field of endocrinology has to offer! **EN**

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

MAY 2016

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

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John D. Baxter, MD, a past-president of the Endocrine Society, was a world-renowned scientist famous for cloning the first human growth hormone gene.



Baxter Family Gifts \$1.2 Million to Endocrine Society

“John was a visionary who was passionate about moving scientific discoveries to patient care. This new award is fueled by that same passion, and we can't wait to see what today's entrepreneurs will accomplish with this support.”

— THE HON. LEE D. BAXTER,
SAN FRANCISCO SUPERIOR COURT
(RET.)

With a \$1.2 million gift from the family of John D. Baxter, MD, the Endocrine Society established the John D. Baxter Prize for Entrepreneurship to recognize scientists and clinicians who have demonstrated innovation and entrepreneurship by furthering the translation of endocrine research into patient care.

Baxter, a past-president of the Endocrine Society, was a world-renowned scientist famous for cloning the first human growth hormone gene. Over his career, he made many fundamental medical discoveries and translated them into clinical therapies that had far-reaching implications in the fields of biotechnology and genetic engineering, improving the health and welfare of patients worldwide. He passed away in 2011.

“We are so thankful for this generous gift from the Baxter family,” says Society immediate past-president Lisa H. Fish, MD. “John epitomized what it means to be an entrepreneur, and so many lives have been impacted because of his innovation. The new prize will recognize today's entrepreneurs in the field, and we are honored to have it bear his name.”

The \$50,000 Baxter Prize will be awarded biennially to candidates who demonstrate entrepreneurship through successful business ventures, partnerships with government agencies, or cooperation with mission-based organizations or foundations. The first Baxter Prize will be awarded in 2018 in Chicago at the 100th anniversary of ENDO.

“John was a visionary who was passionate about moving scientific discoveries to patient care,” says his wife, the Hon. Lee D. Baxter, San Francisco Superior Court (ret.). “This new award is fueled by that same passion, and we can't wait to see what today's entrepreneurs will accomplish with this support.”

The Endocrine Society and the Hon. Lee D. Baxter announced the new prize at **ENDO 2016** in Boston.

New Executive Editor Hired to Manage Society's Open Access Journal



Timothy Beardsley, DPhil, has joined the Society's staff as executive editor in the Publications Department where he will help launch the *Journal of the Endocrine Society (JES)*, the brand-new Open Access (OA) journal, which will debut in fall 2016.

Beardsley will oversee the day-to-day operations as well as the long-range strategic planning, and will lead the management and support for the journal's editorial leadership. Beardsley's responsibilities will also include developing and implementing a data deposition policy for *JES* and other Society journals, as well as helping the Publications Department coordinate content between and among all journals and other publications.

Beardsley brings a broad and strong background in science, journalism, and academic publishing, having worked in the for-profit and nonprofit sectors in the Washington, DC, area for more than 25 years. He has navigated the rapid changes in scientific publishing over the past 15 years, including the rise of OA publishing and the advance of technologies such as FundRef, CrossRef, ORCID, and mobile device optimization. For the last 14 years, he has held the position of editorial director, Publications, at the American Institute of Biological Sciences, publisher of the monthly journal, *BioScience* (print, online, and hybrid OA). Prior to that, he served as a senior writer, Human Genome Sciences; as an associate editor and member, Board of Editors, *Scientific American*; and as a Washington/London Correspondent for *Nature*.

"I am excited to be working with a very distinguished, international group of clinical researchers and basic scientists, as well as an expert staff of publication professionals, to help launch the *Journal of the Endocrine Society*," Beardsley says. "We will take full advantage of the flexibility of online formats to ensure rapid publication of diverse, high-quality, peer-reviewed articles that will advance many aspects of endocrinology."

Beardsley joined the Society's Publications Department on March 28 and attended **ENDO 2016** in Boston last month. Larry Jameson, MD, PhD, executive vice president of the University of Pennsylvania for the Health System and dean of the Perelman School of Medicine at the University of Pennsylvania, has been named editor-in-chief of *JES* (page 42).



Kaiser Health News Senior Correspondent Receives Society's Journalism Award

Kaaiser Health News senior correspondent Julie Rovner received the Endocrine Society's annual Award for Excellence in Science and Medical Journalism.

Rovner was honored at the Society's 98th Annual Meeting & Expo in Boston, for her coverage of the impetus to include more women in clinical trials. The winning article, "GAO: NIH needs to do more to ensure research evaluates gender differences," was published in the *Washington Post* as well as Kaiser Health News.

In her article, Rovner highlighted efforts to incorporate female subjects in federally funded clinical trials as well as preclinical research. Scientific findings indicate that women have a much higher rate of adverse effects from approved medical products, and these adverse effects have resulted in some medications being pulled off the market.

The Society has advocated for federal initiatives to balance the use of male and female subjects in preclinical research examining conditions that affect both sexes. Diverse research subjects are needed to improve scientific understanding of differences between men and women and how these differences impact health.

Established in 2008, the award was created to recognize outstanding reporting that enhances the public's understanding of health issues pertaining to the field of endocrinology.

A BIOGRAPHICAL
HISTORY OF
ENDOCRINOLOGY

D. Lynn Loriaux



WILEY Blackwell

New History of Endocrinology Book Now Available

Endocrinology has a new book, *A Biographical History of Endocrinology*. This isn't the first history of endocrinology, according to the book's author,

D. Lynn Loriaux, MD, PhD, former chair of medicine at the Oregon Health Sciences University.

The book began as *The Endocrinologist*, a clinical journal published from 1991 to 2000. Each bimonthly issue included five to seven clinical reviews and a "Historical Note," an article featuring an important, but not always famous, endocrinologist. Loriaux was editor, and Clark T. Sawin, MD, who was medical inspector for the Veteran's Affairs health system in Washington, DC, when he died in 2004, wrote 45 of the biographies and reviewed others.

The Endocrinologist ceased publication in 2010, and while the clinical review articles were largely out of date, the biographies of deceased endocrinologists remained as current as the day they were first published. Loriaux and the Society opted to republish them in a new book, *A Biographical History of Endocrinology*.

Of the 120 original biographies, 100 were still usable as book chapters; Loriaux added eight new biographies for a total of 108 chapters. They tell the story of endocrinology through the people who created and shaped the discipline, from the first surviving clinical description of the circulatory system in the 60-foot-long Ebers Papyrus (1552 BCE) to Roger Guillemin and Andrew Schally and their work on hypothalamic releasing hormones.

Encompassing all the watershed moments in the history of the profession, each chapter focuses on a key figure and their role in the progression of endocrinology-related medicine and science. This is the only text that provides a concise yet comprehensive biographical history of endocrinology that will benefit not only trainee and qualified endocrinologists but also non-specialists in the medical profession as well as historians of medicine.

And the book thoroughly takes the reader through the history of endocrinology and will expose even the most seasoned endocrinologist to new discoveries. From Aretaeus of Cappadocia, who lived in the first and second centuries CE in Egypt and left the earliest clinical description of diabetes, to Russell Earl Marker who laid the foundation of hormonal contraception and the variety of clinical uses for sex steroids and glucocorticoids, this is an extremely prolific history of the practice and science of endocrinology and the people who pioneered it every step of the way.

To buy your copy, go to: www.endocrine.org/history.

[This article was originally written by Fred Gebhart and appeared in *ENDO Daily at ENDO 2016*.]

Kenji Receives 2016 Vigersky Travel Award

Jyotsna Kenji, MD, is the recipient of the 2016 Harold Vigersky Practicing Physician Travel Award. Kenji is an endocrinologist practicing at Fountain Valley Regional Hospital in Fountain Valley, Calif., and attended medical school at the University of California – Los Angeles.

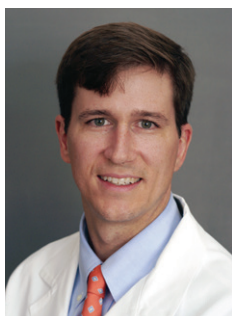
The Vigersky Travel Award was established in 2010 by Society past-president Robert Vigersky to enable U.S. clinicians who do not receive financial support or reimbursement to attend the Endocrine Society's annual meeting (ENDO) or Clinical Endocrinology Update (CEU).

Kenji received complimentary registration at **ENDO 2016** in Boston and a \$1,500 stipend for travel and lost productivity. Clinical practitioners interested in applying for the 2017 Harold Vigersky Practicing Physician Travel Award can learn more at endocrine.org/awards.



New Associate Editors Appointed for *Endocrine Reviews*

Endocrine Reviews has the distinction of having the highest Impact Factors among the journals published by the Endocrine Society. One of the reasons for its prestige among endocrinology journals is due to the highly skilled professionals who scrupulously vet the submitted articles before giving editor-in-chief, Len Wartofsky, MD, the thumbs up (or down). Recently, the journal has appointed two new associate editors, Michael R. Rickels, MD, MS, and Rossella Elisei, MD.



MICHAEL R. RICKELS, MD, MS, is an associate professor of medicine at the Hospital of the University of Pennsylvania as well as the medical director for the Pancreatic Islet Cell Transplantation program at the Hospital of the University of Pennsylvania. He graduated

summa cum laude from Colgate University in 1995, with a bachelor's degree in mathematics, and went on to receive his medical degree (1999 — top of his class), as well as a master's of science degree in translational research (2007), from the University of Pennsylvania School of Medicine.

Rickels specializes in diagnosing and treating diabetes, hypoglycemia disorders, and general endocrine disorders. In the clinical setting, he treats patients with type 1 and type 2 diabetes, with a particular interest in islet and pancreas transplantation as therapies for type 1 diabetes. His research is focused on understanding the mechanisms of diabetes treatments, and his studies include looking at restoring glucose counterregulation by islet transplantation in type 1 diabetes; the role of GLP-1 after gastric bypass; and the effects of exenatide, sitagliptin, and glimepiride on treating early type 2 diabetes.

ROSSELLA ELISEI, MD, is an associate professor of endocrinology at the University of Pisa in Italy. She received her medical degree from the University of Pisa in 1985 and then her specialty degree in endocrinology in 1988 from the University of Pisa, graduating *magna cum laude* both times. She was a postdoctoral research fellow in the Endocrinology Branch of the Institute of Interdisciplinary Research (IRIBHN), Belgium Université Libre de Bruxelles, Belgium, from 1989 to 1990. She then was a postdoctoral assistant at Cedars-Sinai Medical Center in Los Angeles, in 1995, as well as a postdoctoral assistant at the University of Cincinnati in Ohio from 1995 to 1997.

Her clinical research focuses on the thyroid, specifically how radiation therapy affects the disorders of this gland, for which she has won numerous awards. In 2006, she received the International Award for Excellence for her study on radioiodine ablation of thyroid remnants after preparation with recombinant human thyrotropin in differentiated thyroid carcinoma, which was published in *The Journal of Clinical Endocrinology & Metabolism (JCEM)*. She again received the International Award for Excellence in 2012 for another study published in *JCEM*, titled “The timing of total thyroidectomy in RET gene mutation carriers could be personalized and safely planned on the basis of serum calcitonin: 18 years experience at one single center.” ^{EN}



Seattle, Washington

Interdisciplinary Symposium on Osteoporosis 2016

Miami, May 12 – 15

World-renowned experts will lead in-depth educational sessions on the prevention, diagnosis, and treatment of osteoporosis featuring clinically relevant and evidence-based information on osteoporosis and fracture prevention.

www.nof.org

ADA 76th Scientific Sessions

New Orleans, June 10 – 14

This event offers researchers and healthcare professionals from around the world the unique opportunity to share ideas and learn about the significant advances in diabetes research, treatment, and care. Over the course of five days, participants will receive exclusive access to more than 2,500 original research presentations, take part in provocative and engaging exchanges with leading diabetes experts, expand their professional networks, and so much more.

www.diabetes.org

Santa Fe Bone Symposium

Santa Fe, N.M., August 4

The Santa Fe Bone Symposium is an annual forum devoted to advances in the science and economics of osteoporosis, metabolic bone disease, and assessment of skeletal health. Close interaction and collaboration between faculty and participants is an integral part of this event.

www.nof.org

AADE16

San Diego, August 12 – 15

Each year, thousands of diabetes educators from around the country attend the American Association of Diabetes Educators (AADE) Annual Meeting and Exhibition to learn about the newest and greatest in the world of diabetes through presentations and hands-on experience with products in the exhibit hall.

www.aademeeting.org

Clinical Endocrinology Update 2016

Seattle, September 8 – 10

This three-day meeting provides the latest information available in clinical endocrinology. Taught by expert faculty in a dynamic meeting format, you will return from CEU confident that your endocrine practice benefits from the most current and advanced information possible.

[www.endocrine.org/ceu](http://www.endocrine.org)

Endocrine Board Review 2016

Seattle, September 11 – 12

Identify areas for improvement at the most in-depth board preparation available. Fellows preparing to sit for the boards and certified practitioners needing to maintain certification will benefit from EBR, the premier preparatory mock exam.

www.endocrine.org/ebv

86th Annual Meeting of the American Thyroid Association

Denver, September 21 – 25

The ATA meeting is designed for the community of endocrinologists, internists, surgeons, basic scientists, nuclear medicine scientists, pathologists, trainees, nurses, physician assistants, and other healthcare professionals who wish to broaden and update their knowledge of the thyroid gland and its disorders.

www.thyroid.org

ObesityWeek 2016

New Orleans, October 31 – November 4

The preeminent annual scientific and educational conference covers the full scope of the obesity issue, from cutting-edge basic science and clinical research to intervention and public policy discussions that can impact the quality of life for millions affected by obesity.

www.obesity.org

INTERNATIONAL MEETINGS

Dimensions in Diabetes

Mumbai, India, July 16 – 17

The goal of the program is to foster relationships with endocrinologists around India, while providing a clinical update in the field of diabetes. Supported by SunPharma, the two-day program brings in eight faculty members to present in-depth lectures on diabetes and its comorbidities.

www.endocrine.org

EndoBridge 2016

Antalya, Turkey, October 20 – 23

EndoBridge provides a comprehensive update in the field of endocrinology and is specifically designed for the clinical endocrinologist. The official language of the meeting is English, but simultaneous translation will be available in Russian, Arabic, and Turkish.

www.endobridge.org

PPTOX V

Fukuoka, Japan, November 13 – 16

The international summit of Prenatal Programming and Toxicity (PPTOX) is dedicated to cutting-edge discussion of environmental hazards during early life and long-term consequences. PPTOX is one of the premier international venues for scientists to evaluate current knowledge and guide forward momentum for this burgeoning field.

www.pptoxv.com



Antalya, Turkey



WHY ENDOCRINOLOGY?

The Link Between Behavior and Biochemistry

BY C. MICHELE CHRISTIE, MD, Pediatric Endocrinology,
Mid Atlantic Permanente Group, Alexandria, Va.


As a child, medicine was a familiar topic discussed in our home. My father and two maternal uncles were the first in their families to graduate from medical school in Glasgow, Scotland, but after an internship in the U.S., my father decided to stay. He experienced a variety of clinical positions before moving our family to Radnor, Pa., to join Wyeth Pharmaceuticals as its international medical director. In middle school, I can recall asking for his help while studying hormone interactions for the first time. The subject proved fascinating and stimulated a lifelong interest in the field.

When I eventually began a rotation in endocrinology as a pediatric resident at Le Bonheur Children's Hospital in Memphis, Tenn., in the 1980s, it became clear that this was the field of medicine that I most enjoyed. Endocrinology provided insight into some of the links between behavior and biochemistry, a particular interest of mine. Importantly, it was clear that there was much to be discovered in the field, and I relished the thought of a career that would require continuous learning. During the decade after I finished a pediatric endocrine fellowship at the University of Virginia, in Charlottesville, I began to see my first pediatric patients with type 2 diabetes and polycystic ovary syndrome,

disorders previously seen primarily in adult endocrine clinics. During the most recent decade, we have learned much about the genetic causes of many hormonal disorders.

In choosing endocrinology as a career, it was important that the practice required attention to clinical skills and an emphasis on the doctor-patient relationship. I had the great fortune during my fellowship training to witness a master of both: Robert Blizzard, MD. In addition, I had the unique opportunity to work with Alan Rogol, MD, who shared his enthusiasm for research, and with the diabetologist, Bill Clarke, MD, who worked incessantly to improve the lives of children with diabetes.

“
In choosing endocrinology as a career, it was important that the practice required attention to clinical skills and an emphasis on the doctor-patient relationship.
”

Finally, during that pivotal rotation as a pediatric resident, I observed my attending, Elizabeth Schriock, MD, as she interacted with one interesting patient after another while pregnant with her second child. Elizabeth provided the inspiration to believe that one could pursue a career in endocrinology and still strive for work/life balance. For the past 26 years, I have been fortunate to work within an organization that has allowed me enough flexibility to both raise a family and pursue a career. It has been a rewarding journey. 

To celebrate 100 years of the Endocrine Society, throughout 2016 *Endocrine News* is running a “Why Endocrinology?” column in each issue. If you'd like to share your story with our readers, contact Mark A. Newman at mnewman@endocrine.org.

“The scope of research in endocrinology and biomedical science is enormous. The field benefits from diverse subfields and contributions from a whole array of technologies. Good collaborations occur when both parties share an interest but bring different strengths to the problem, which enables you to do far more than you could on your own. This way, both parties benefit and receive recognition.”

— JOHN KATZENELLENBOGEN, PHD, from “Lab Partners” page 45. Katzenellenbogen recently shared the Endocrine Society’s 2016 Fred Conrad Koch Lifetime Achievement Award with his wife, Benita, both of whom collaborate at the University of Illinois.

FROM THE CENTURY OF ENDOCRINOLOGY TIMELINE

1917:

First Meeting Held



ART AND PICTURE COLLECTION, THE NEW YORK PUBLIC LIBRARY. (1904). HOTEL MANHATTAN, NEW YORK

The first meeting of the Society of Internal Secretions was held on June 4, 1917, at the Hotel Manhattan in New York City.

The meeting focused on both the state of current research and the future of the field. Dr. Sajous wrote in the first issue of *Endocrinology*, shortly before the meeting: “It will soon be fourteen years since the writer earnestly urged the American profession to devote some thought to this vast field, suggesting what appeared to him as fruitful avenues in the light of all the evidence then available and what personal observations, experimental and clinical, he could contribute.”

For more about the Century of Endocrinology, go to: www.ESCentennial.org/timeline.

Healthcare Costs & Financial Hardships

60% NO PROBLEM

9% VERY SERIOUS PROBLEM

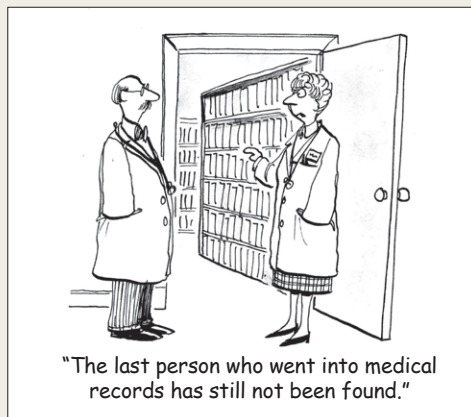
10% NOT TOO SERIOUS OF A PROBLEM

17% SOMEWHAT SERIOUS PROBLEM



The poll surveyed 1,000 U.S. adults nationwide and found that although a majority of Americans are satisfied with the healthcare they receive, many still experience significant problems with costs, insurance coverage, and accessing care when they need it.

— SOURCE: NPR/ROBERT WOOD JOHNSON FOUNDATION/HARVARD T.H. CHAN SCHOOL OF PUBLIC HEALTH



“The last person who went into medical records has still not been found.”

SHUTTERSTOCK.COM/CARTOONRESOURCE

45%

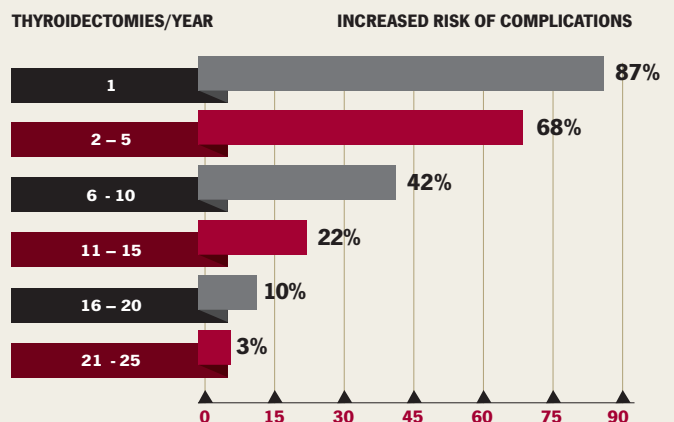
The amount by which work-related stress raises the risk of type 2 diabetes.

— SOURCE: DIABETES UK

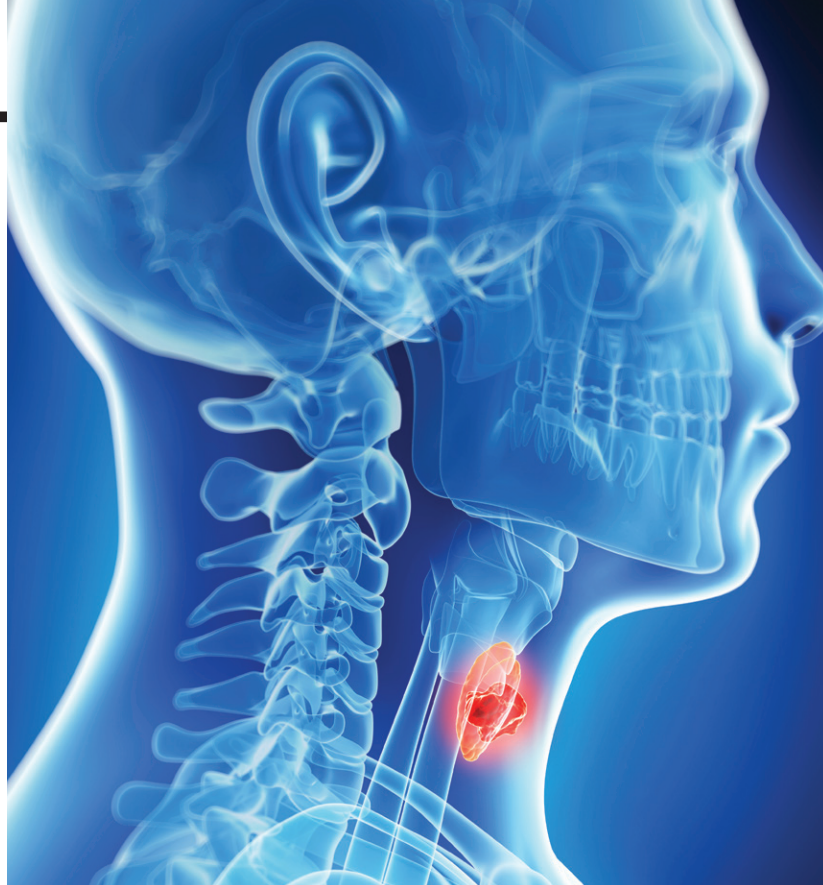
More Thyroidectomies = Better Patient Outcomes

Patients treated by surgeons who perform 25 or fewer thyroidectomies each year have an increased risk of complications compared to patients whose surgeons perform 26 or more thyroidectomies annually.

— SOURCE: DUKE HEALTH



Thyroid Tumor Reclassified as Non- Cancerous



A certain type of thyroid tumor previously classified as cancer has been downgraded to non-cancerous by a panel of dozens of experts, according to a study recently published in the *Journal of the American Medical Association Oncology*.

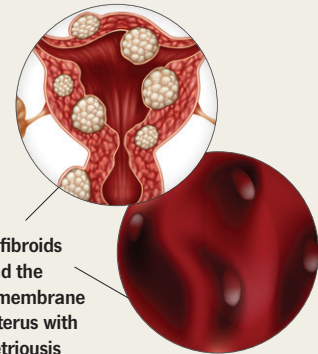
The tumor — encapsulated follicular variant of papillary thyroid carcinoma (EFVPTC) — used to be called a cancer, and patients with EFVPTC were treated as having conventional thyroid cancer. But 24 researchers led by Yuri E. Nikiforov, MD, PhD, of the University of Pittsburgh conducted an international, multidisciplinary, retrospective study of 109 patients with noninvasive EFVPTC observed for 10 to 26 years and 101 patients with invasive EFVPTC observed for one to 18 years, in order to determine the frequency of adverse outcomes in these patients.

Of the 109 patients with noninvasive EFVPTC, all were alive with no trace of the tumor at a median follow-up of 13 years (range of 10 – 26 years). None of these patients had received radioactive iodine ablation, and 67 of them had been treated only with a lobectomy. Of the 101 patients with invasive EFVPTC, 12 had adverse events, including five patients who developed distant metastases, two of whom died.

“Based on the outcome information for noninvasive EFVPTC, the name ‘noninvasive follicular thyroid neoplasm with papillary-like nuclear features’ (NIFTP) was adopted,” the authors write. “A simplified diagnostic nuclear scoring scheme was developed and validated, yielding a sensitivity of 98.6% (95% CI, 96.3%-99.4%), specificity of 90.1% (95% CI, 86.0%-93.1%), and overall classification accuracy of 94.3% (95% CI, 92.1%-96.0%) for NIFTP.”

BY DEREK BAGLEY

Findings: The international panel of researchers conclude that since noninvasive EFVPTC has a very low risk of adverse outcomes, it should be reclassified from cancer to the term NIFTP. “This reclassification will affect a large population of patients worldwide and result in a significant reduction in psychological and clinical consequences associated with the diagnosis of cancer,” they write.



Uterine fibroids (top) and the mucus membrane of the uterus with endometriosis (bottom)

EDCs May Contribute to Female Reproductive Disorders, Huge Economic Burden

Exposure to endocrine-disrupting chemicals (EDCs) may contribute to female reproductive disorders like fibroids and endometriosis, as well as associated economic costs in the European Union (EU) at approximately €1.41 billion annually, according to a study recently published in *The Journal of Clinical Endocrinology & Metabolism*.

Researchers led by Leonardo Trasande, MD, MPP, of the New York University School of Medicine, noted the “growing body of evidence” that implicates EDCs in causing female infertility issues, so they looked to the EU to determine what disorders women experience and the economic burden caused by EDCs.

An expert panel was assembled to study two exposure-outcome relationships: adult diphenyldichloroethene (DDE) exposure with fibroids and adult phthalate exposure with endometriosis. They considered other chemicals, such as dioxins, but chose not to follow up with those since they are already regulated by the Stockholm Convention. “The panel selected these exposure-outcome relationships because of the availability of well-conducted observational human studies to assess effects of these EDCs on female reproductive disorders,” the authors write.

The researchers evaluated these relationships using biomarker data from carefully selected, peer-reviewed literature, and estimated cost of illness using multiple peer-reviewed sources. For adult DDE exposure with fibroids and adult phthalate exposure with endometriosis, they found that the probability of causation was about 20% – 39%. “Across the EU,” they write, “attributable cases were estimated to be 56,700 and 145,000 women, respectively, with total combined economic and healthcare costs potentially reaching €163 million and €1.25 billion.”

Findings: The authors conclude that the EDCs they studied (diphenyldichloroethene and phthalates) may contribute substantially to fibroid and endometriosis, two of the most common reproductive disorders women experience. Not only that, but the associated costs could reach €1.5 billion annually. “These estimates represent only EDCs for which there were sufficient epidemiologic studies and those with the highest probability of causation,” the authors write. “These public health costs should be considered as the EU contemplates regulatory action on EDCs.”

Medicare's Competitive Bidding Program Disrupts Access to Diabetes Testing Supplies, Puts Lives at Risk



Medicare's Competitive Bidding Program (CBP) is causing confusion among beneficiaries with diabetes, increasing the rate and costs of hospitalization for these beneficiaries and putting their lives at risk, according to a study recently published in *Diabetes Care*. The findings from the National Minority Quality Forum (the Forum) point to a cost-saving strategy that is costing lives and money. The original intent of the CBP was to save money on durable medical equipment, but the data show it is actually driving up costs in the form of avoidable hospital bills and exposing beneficiaries to much higher out-of-pocket costs for those unnecessary inpatient stays.

The Centers for Medicare and Medicaid Services (CMS) launched the CBP in 2011 in nine markets for diabetes supplies with the intent of lowering consumer costs, and the administrator of the Medicare program, claims that the CBP poses no health threat to beneficiaries. However, the Government Accountability Office (GAO) challenged the safety monitoring of the CBP, stating that the monitoring methods used by CMS in assessing the impact of competitive bidding did not directly show whether beneficiaries received the durable medical equipment needed on time or whether health outcomes were caused by problems accessing CBP-covered equipment.

The Forum built upon the GAO's analysis by examining access to diabetes testing supplies for Medicare beneficiaries living with diabetes and requiring insulin therapy. Researchers led by David G. Marrero, PhD, of the Diabetes Translational Research Center in Indianapolis, looked at insulin users in two markets: 43,939 beneficiaries in the nine test markets (TEST) and 485,688 beneficiaries in the nontest markets (NONTTEST). Those two cohorts were subdivided among those who had full self-monitoring of blood glucose supply acquisition (full SMBG) and those with partial or no acquisition (partial/no SMBG). "Propensity score-matched analysis was performed to reduce selection bias," the authors write. "Outcomes were impact of partial/no SMBG acquisition on mortality, inpatient admissions, and inpatient costs."

Findings: The Forum's study found that the CBP disrupted beneficiaries' ability to access diabetes testing supplies, and this disruption was associated with an increase in mortality, higher hospitalization rates, and higher inpatient costs. "Survival was negatively associated with partial/no SMBG acquisition in both cohorts ($P < 0.0001$)," they write. "Coterminous with CBP (2010 – 2011), there was a 23.0% ($P < 0.0001$) increase in partial/no SMBG acquisition in TEST vs. 1.7% ($P = 0.0002$) in NONTTEST."

"Self-monitoring blood glucose supplies are a critical component of diabetes care among insulin-treated individuals and the

value of safe, effective testing supplies cannot be underestimated,” says Jaime Davidson, MD, clinical professor of Medicine at the University of Texas Southwestern Medical Center, and an author of the study. “We are particularly concerned about the disruption we detected in our analysis given the predominant use of rapid- and short-acting insulin by Medicare beneficiaries, who are at significantly greater risk for hypoglycemia than younger individuals with insulin-treated diabetes.”

“We are troubled that CMS failed to detect these ‘unintended’ consequences and, instead, reported that the program was a success,” says Gary A. Puckrein, PhD, president and CEO of the National Minority Quality Forum and a study author. “Based on our findings and employing the safety monitoring protocols commonly used to protect human subjects, we believe policy makers should immediately suspend the program until CMS can demonstrate its ability to effectively monitor the effects of the program, correct the structural flaws causing this problem, and ensure that the lives of America’s greatest generation are no longer at risk.”




Diabetes Management Program Not Effective in Reducing Health Disparities

A California telephone-based diabetes management program was found to be ineffective in reducing racial and ethnic disparities in diabetes care, according to a study recently published in *Diabetes Care*.

Investigators led by Ying-Ying Meng, DrPH, of the UCLA Center for Health Policy Research, noted the existence of disparities in treating diabetes among California’s Medicaid beneficiaries, so they conducted a study to test the effectiveness of a three-year-long, telephone-based disease management program aimed at Medicaid fee-for-service beneficiaries, ages 22 to 75, and diagnosed with diabetes. They looked to see whether these beneficiaries had received at least one HbA1C test, LDL-cholesterol test, and retinal examination each of the three years. The authors write: “We used generalized estimating equations models with logit link to analyze the claims data for a cohort of beneficiaries in two intervention counties ($n = 2,933$) and eight control counties ($n = 2,988$) from September 2005 through August 2010.”

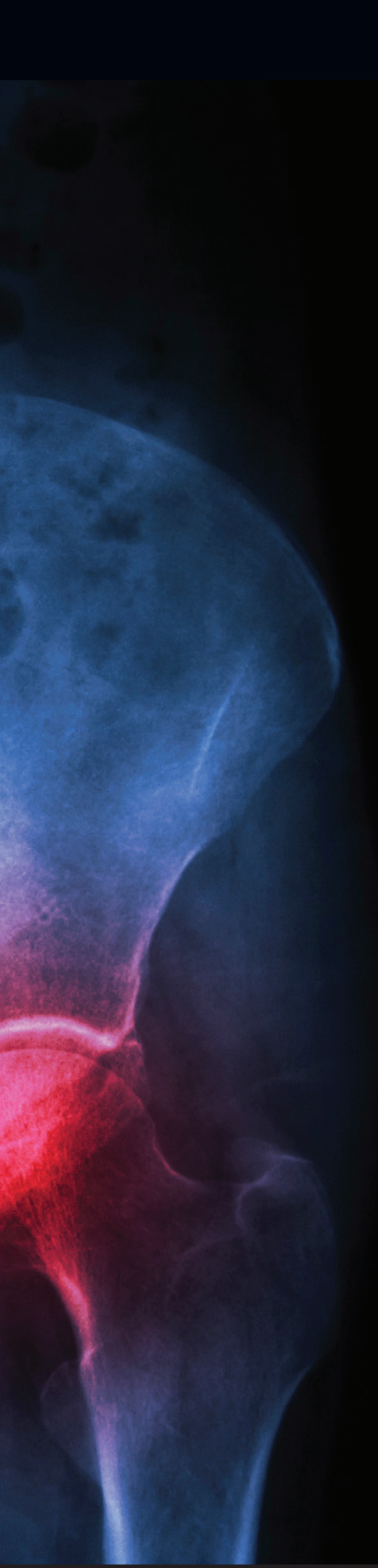
Before the program, the researchers found, racial and ethnic disparities existed in all three types of testing. African Americans (0.66) and Latinos (0.77) had lower rates of HbA1C testing than whites (0.83) in the intervention counties, and once the intervention took place, the disparity persisted. “For Asian Americans and Pacific Islanders, the disparity in testing rates decreased,” the authors write. “We did not find similar disparities in the control counties.”

Findings: The authors therefore conclude that this telephone-based diabetes management program did not reduce health disparities in diabetes care in the most racially/ethnically diverse counties in California. 



BY KELLY HORVATH

Breaking NEWS



A new study shows that growth hormone has lasting positive effects on osteoporosis and associated fracture risk. Unfortunately, lessening these occurrences does not always equate to an improved quality of life.

AS THE GLOBAL POPULATION AGES, THE PREVALENCE OF AGE-RELATED CONDITIONS LIKE OSTEOPENIA AND OSTEOPOROSIS IS INCREASING. In the United States alone, more than 34 million people are reported to have low bone mineral density (BMD), and another 10 million or more have osteoporosis, according to the Endocrine Society's 2016 Endocrine Facts and Figures Report. Among this population, about 2 million bone fractures occur annually, a number expected to rise to 3 million within a decade. For women, these statistics have particular significance, as 80% of osteoporosis diagnoses are for women, and women are three times more likely than men to have an osteoporosis-related fracture.

Apart from the pain and the cost of fractures themselves, osteoporosis can have severe deleterious effects on quality of life, from the social isolation brought about by increasing immobility, to the need for assisted living or long-term nursing home care, to the comorbidities and even death that may result from serious fractures. Although treatments exist, approved osteoporosis drugs (including bisphosphonates, the first-line treatment) have yet to stem the rising tide of fracture incidence, perhaps due partly to undertreatment of low BMD. Given the decrease in growth hormone (GH) secretion that occurs beginning in middle age and progressively declines thereafter, researchers at the Center for Endocrinology and Metabolism at Sahlgrenska University Hospital in Gothenburg, Sweden, administered GH injections to 80 postmenopausal women ages 50 to 70 years from 1994 to 1996 to determine if replacing the GH lost during somatopause would decrease their risk of fracture — that is, by increasing their BMD and bone mineral content (BMC).



Given the decrease in growth hormone (GH) secretion that occurs beginning in middle age and progressively declines thereafter, researchers at the Center for Endocrinology and Metabolism at Sahlgrenska University Hospital in Gothenburg, Sweden, administered GH injections to 80 postmenopausal women to determine if replacing the GH lost during somatopause would decrease their risk of fracture.

“Osteoporosis is a severely undertreated disease, and more must be done to discover risk patients and to tailor their treatment.”

— EMILY KRANTZ, MD,
SÖDRA ÄLVSBOGGS HOSPITAL, BORÅS, SWEDEN

Risk Reduction

In “Effect of Growth Hormone Treatment on Fractures and Quality of Life in Postmenopausal Osteoporosis: A 10-Year Follow-Up Study” published in *The Journal of Clinical Endocrinology & Metabolism*, Emily Krantz, MD, of Södra Älvsborgs Hospital in Borås, Sweden, and colleagues reported on the trial participants’ fracture and quality of life status seven years later. During the three-year trial, participants had been randomized to three groups, with 28 receiving 0.33 mg/d (1.0 U/d) recombinant human GH, 27 receiving 0.83 mg/d (2.5 U/d) recombinant human GH, and 25 receiving placebo. In addition to being postmenopausal and osteoporotic, participants also had been on ongoing hormone replacement therapy (HRT) and were given 750 mg calcium and 400 U vitamin D supplements daily. Among them, 45 (56%) had suffered osteoporotic fractures — 21 of the radius, 18 of a vertebra, seven rib, five ankle, two hip, and two upper arm — and their mean L2–L4 BMD T-score was –2.7 standard deviations. A control group of 120 postmenopausal women ages 55 to 64 years was also recruited and followed up at ages 67 to 76 years.



AT A GLANCE

“The study is, to our knowledge, the largest and longest controlled study with GH treatment in postmenopausal osteoporosis,” Krantz says. All 80 women were monitored through both the three-year study period and the 10-year follow-up; however, six died before follow-up completion — three from the placebo group, two from the lower-dose GH group, and one from the higher-dose GH group — all from non-osteoporosis-related or GH treatment-related causes.

“The GH treatment had a sustained effect on reducing the patients’ fracture risk seven years after the treatment ceased, which has not been shown before,” Krantz says. Positive, dose-dependent effects of the GH treatment on the patients’ BMD and BMC were seen throughout body regions. Seven years post-treatment, 28% of participants had fractured bones (29 fractures in 22 women), nine fractures in the placebo group, 15 fractures in the lower-dose GH group, and 10 fractures in the higher-dose GH group; thus, fracture incidence was cut in half (from 56% prior to the trial) in this cohort. Participants had lower body mass indexes (an important predictor of low BMD) than did controls both at the commencement of the trial and 10 years later, and their overall body compositions did not change except for a decrease in lean body mass. Controls, by contrast, experienced weight gain. In the control group, fracture risk increased fourfold, from 8% to 32%. (The similar BMD and BMC outcomes in the placebo group as compared to the two GH-treated groups is possibly due to their comparatively higher body masses as well as the calcium and vitamin D supplementation they were given during the trial.)

Treating the Undertreated

Although significant differences were seen in BMD and BMC measurements between treated and control groups, quality of life indices did not differ. Quality of life was assessed with a 36-item questionnaire, surveying both physical (functioning, pain, and general health) and mental health (vitality, social functioning, and emotions) as well as providing a snapshot of disease burden among participants and controls. The similarity in quality-of-life self-reports is attributed, at least in part, to the parity in fracture incidence. Although the treated group’s incidence declined and the control group’s increased, the treated group had a much higher incidence of prior fracture than did the controls, resulting in an ultimate leveling out of prevalence across groups. Also notable, among the treated group, quality of life did not improve over the course of trial and follow-up, even as fracture risk declined.

- ▶ **Treatment for three years with growth hormone demonstrated continued increases in bone mineral density and bone mineral content seven years after treatment cessation.**
- ▶ **The long-lasting effects of GH also halved fracture incidence, even in a predisposed osteoporitic population.**
- ▶ **Although osteoporosis and associated fractures have a potentially devastating effect on quality of life, decreasing fracture prevalence did not demonstrate a correlating increase in quality of life indices.**

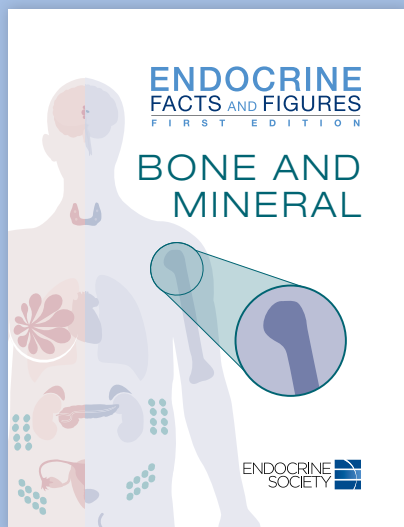
ONPOINT

from the

ENDOCRINE
SOCIETY

The latest edition of *Endocrine Facts and Figures* is available and focuses on Bone and Mineral. There are a number of helpful references on osteoporosis, osteopenia, vitamin D deficiency, primary hyperparathyroidism, and much more.

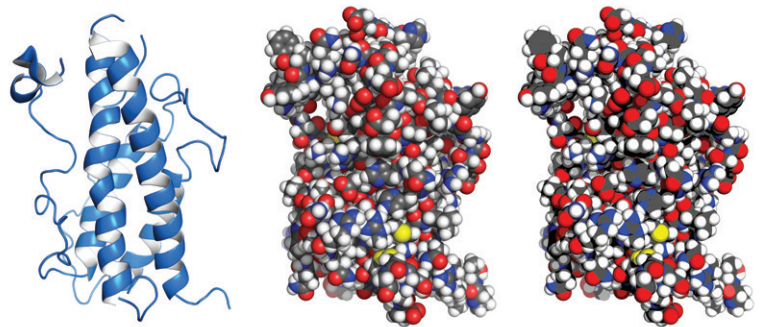
For more information, go to www.endocrinefacts.org.



“If growth hormone could exist in a long-acting preparation, so that it could be given once a week or once a month, then it could be of interest for this patient group.”

— EMILY KRANTZ, MD, SÖDRA ÄLVSBORGS HOSPITAL, BORÅS, SWEDEN

Human growth hormone models



Although other bone-specific, anabolic osteoporosis treatments have been approved since the trial was undertaken (for example, teriparatide for severe osteoporosis and denosumab), bisphosphonates remain the most common treatment. “Osteoporosis is a severely undertreated disease, and more must be done to discover risk patients and to tailor their treatment,” Krantz says. “Currently, GH treatment is expensive. Although the injections are taken by the patients themselves, treatment must be monitored by a specialist clinic, which is not in its favor when considering it in a practical clinical setting. But, I think that if GH could exist in a long-acting preparation, so that it could be given once a week or once a month, then it could be of interest for this patient group.” Researchers from the original trial had also demonstrated that in addition to GH’s positive effect on bone tissue, it also increases muscle mass, which can lead to better body balance. And, as Krantz points out, “Better balance reduces the risk for falls, which reduces the risk of fractures, which is the ultimate goal regardless of which drug is in question.” ^{EN}

HORVATH IS A FREELANCE WRITER BASED IN BALTIMORE, MD. SHE WROTE THE FEBRUARY COVER STORY ON CARDIOVASCULAR HEALTH AND THE ENDOCRINE SYSTEM.

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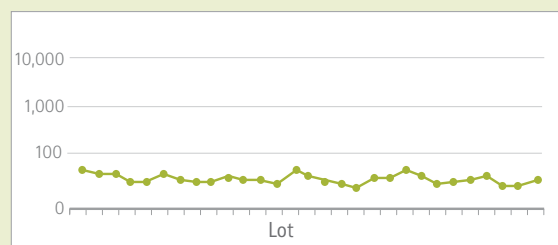
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A photograph of a middle-aged woman with short, wavy, light brown hair. She is wearing a bright blue, short-sleeved, textured t-shirt. Her right arm is wrapped in a white medical cast, extending from her elbow to her hand. She is looking down at her hand with a slight, somber expression. The background is plain white. To the right of the woman, there is a block of text in a bold, orange font. A thin black line connects the text to the casted arm.

A care model that reduces fractures and reduces overall costs should be an easy sell — but osteoporosis experts face obstacles to introducing fracture liaison services in fee-for-service environments.

FRACTURE Liasons:

A Proven Approach to Reducing Future Breaks

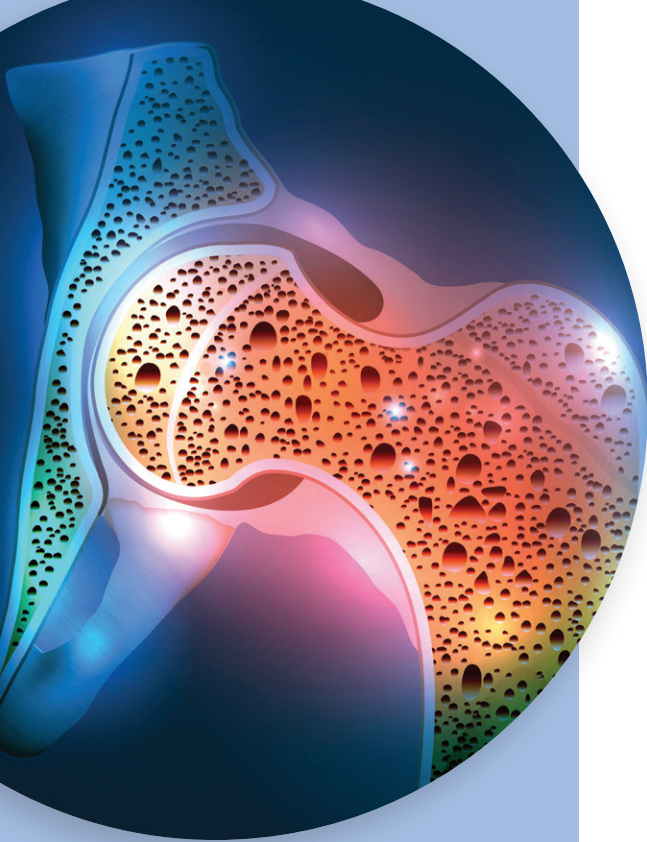
BY ERIC SEABORG

A cross-disciplinary outreach approach that ensures that patients over 50 who suffer a major fracture get evaluated for osteoporosis has been proven to reduce future fractures and reduce overall costs in single-payer countries and American HMOs.

Now a determined group of bone experts is set on spreading the fracture liaison service (FLS) model to more U.S. institutions and breaking down the barriers to its adoption in fee-for-service systems. The National Bone Health Alliance's (NBHA) 20/20 vision program is aimed at reducing fractures by 20% by the year 2020.

Too often patients over 50 with major fractures are patched up and sent home with no consideration of the future, says endocrinologist Ethel Siris, MD, professor of medicine at Columbia University Medical Center in New York City: "Nobody thinks about preventing the next fracture because everybody is focusing on the patient getting better from the one that just happened. So a lot of these folks don't get treated, and then they refracture."

One reason these patients slip through the cracks is that the treatment crosses specialties — the orthopedic surgeon is the "fracture fixer," and the endocrinologist is the "next-fracture preventer," Siris says. Many approaches have been tried to bridge this gap, but the FLS is the only one with proven results.



AT A GLANCE

- ▶ **Few postmenopausal women and men over 50 get evaluated for osteoporosis after suffering a low trauma fracture.**
- ▶ **Fracture liaison services — in which a care navigator works to ensure that patients get needed follow-up — reduce future fractures and overall healthcare costs.**
- ▶ **Implementing these services can be a challenge, but the National Bone Health Alliance offers a wealth of resources to help in doing so.**

Big Reductions in Fractures and Costs

The approach seems simple enough — have a healthcare navigator intervene with patients in the hospital, make sure they understand that their fracture could be a sign of an underlying problem, and arrange for them to be evaluated. The model has had dramatic success in “closed,” HMO-style systems in which the institution benefits directly by avoiding future costs by keeping the patient healthy. Geisinger Health System estimates that the approach saved it \$7.8 million from 1996 to 2000.

Kaiser Permanente Southern California estimates that it has reduced the expected hip fracture rate by more than 40%. If that success could be implemented nationally, Kaiser estimates it could reduce the number of hip fractures by more than 100,000 and save over \$5 billion a year, according to David Lee, MPA, executive director of the NBHA. But a major obstacle to introducing the model in most fee-for-service U.S. healthcare systems is figuring out how to pay for a model that results in reduced costs down the road.

To identify ways to overcome the obstacles to FLS programs, the NBHA was part of a project funded by Merck involving three pilot sites testing information technology tools. One of these clinical sites was run by Robert R. Recker, MD, chief of the division of endocrinology and director of the Osteoporosis Research Center at Creighton University in Omaha, Nebraska. He says that at the start of the project his institution’s record was in line with the U.S. average of “only 23% of U.S. patients discharged from the hospital after treatment of an osteoporotic fracture actually getting a diagnosis or treatment.” The grant funded a nurse in the orthopedic department to receive training from the National Osteoporosis Foundation and then act as the fracture liaison. The liaison’s work led to an 80% increase in the number of patients who received the follow-up they needed. Since the funding for the pilot program ran out, the nurse strives to connect patients with the treatment they need. But she cannot continue with the same intensity because she must carry out her other duties as well.

A Liaison’s Experience

Siris could implement a successful fracture liaison service at Columbia University Medical Center thanks to a grant from a local foundation. Siris hired a worker without any formal healthcare degree. Because Siris has been heavily involved in the movement to introduce the FLS concept to the U.S., she could provide the training herself. “The fracture liaison is not involved in the actual administration of care to those patients. She is involved in navigating them to care,” Siris says.



The fracture liaison, Tayra Keshinover, says, “I speak to all inpatients in the orthopedic service who are over 50 years old and who fell and broke a bone. I educate them about osteoporosis and link them to care at the osteoporosis center.”

Many patients think that falling and breaking a bone is just a normal part of aging, Keshinover says. They want to get the break treated and don’t want to deal with further doctor appointments. So an important part of Keshinover’s job is to explain that a fracture may not be an isolated, one-off occurrence but rather a sign of a deeper, systemic disease. “They don’t understand that they have a treatable disease like osteoporosis,” Keshinover says, so she needs to explain the implications and future risks, and how the disease can be treated. Explaining that they could end up back in the hospital with another break often gets their attention. Her fluency in Spanish helps in the patient population at Columbia.

Keshinover also enlists the cooperation of the orthopedists to overcome the tendency for patients to say that “they don’t want to deal with it right now, they will think about it later. Patients trust their orthopedic surgeons, so if an orthopedist gives them a little nudge, and says this is really important that you go to this appointment, it really helps.”

“ Nobody thinks about preventing the next fracture because everybody is focusing on the patient getting better from the one that just happened. So a lot of these folks don’t get treated, and then they refracture.”

— ETHEL SIRIS, MD, PROFESSOR OF MEDICINE,
COLUMBIA UNIVERSITY
MEDICAL CENTER, NEW YORK



ABOUT THE NBHA

The National Bone Health Alliance (NBHA) is a public-private partnership launched in 2010 that brings together the expertise and resources of its member organizations to collectively: promote bone health and prevent disease; improve diagnosis and treatment of bone disease; and enhance bone research, surveillance, and evaluation.

The Endocrine Society is just one of the 54-member organizations that make up the NBHA, along with the Centers for Disease Control and Prevention, National Aeronautics and Space Administration, National Institutes of Health, and the U.S. Food and Drug Administration, all working together to bring about a shared vision: to improve the overall health and quality of life of all Americans by enhancing their bone health.

NBHA members and other experts make up the various committees, project teams, and working groups that carry out the work of the Alliance, while projects and operations are funded through financial support from member organizations.

For more information, go to NBHA.org.

After patients have been discharged, Keshinover continues to stay in touch with them to make sure they come to follow-up appointments to be evaluated and have their bone mineral density tested. “I work with the practice managers in both the clinic and the private offices to get the patients through in an orderly and timely manner,” Keshinover says.

Siris says that their follow-up rate on such patients was “close to zero” before implementation of an FLS and is now about 25%. The foundation has been so pleased with the results that it is funding another half-time person. “It sounds like a simple concept, but it requires a lot of work by the fracture coordinator to get these folks to come back,” Siris says. The physicians in the orthopedic department realize this and have been delighted that Siris’ department has taken the lead in providing the follow-up.

Expanded Definition of Osteoporosis

One recent change that is helping to get more patients covered is the expanded definition of osteoporosis beyond reliance on T-scores that was recently proposed by the NBHA and endorsed by a large number of medical societies. The new diagnostic criteria include most patients hospitalized after a fragility fracture and have expanded the patient population that many insurers are willing to cover (see December 2015 *Endocrine News*).






“ Now we have a mechanism that is proven to work. It reduces future fractures.”

— ETHEL SIRIS, MD, PROFESSOR OF MEDICINE, COLUMBIA UNIVERSITY MEDICAL CENTER, NEW YORK

NBHA is also working on understanding how institutions can take advantage of new payment codes that could help support the salary of FLS coordinators. Lee says that as healthcare reform moves forward and “carrots and sticks continue to kick in,” institutions may soon find themselves behind the times and facing penalties without an FLS providing preventive care.

Lee estimates that there are currently about 300 to 350 FLS programs in the U.S., and that number needs to grow to about 1,000 to achieve the NBHA’s goal of reducing fractures by 20% by 2020.

“There is not much debate about whether these patients are at high risk. They need treatment, and in the past we haven’t done a good job of getting them in and treated. Now we have a mechanism that is proven to work. It reduces future fractures. You have to convince your hospital administration that it is worth doing,” Siris says. 

SEABORG IS A FREELANCE WRITER BASED IN CHARLOTTESVILLE, VA. HE WROTE ABOUT THE ENDOCRINE SOCIETY’S CLINICAL PRACTICE GUIDELINE ON MENOPAUSE TREATMENT IN THE MARCH ISSUE.

FRACTURE PREVENTION CENTRAL

The National Bone Health Alliance has a wealth of resources about implementing a fracture liaison service, including webinars and more at www.FracturePreventionCENTRAL.org.

The NBHA also offers a free one-on-one peer-consult service for advice on how to get started. “We can pair physicians and FLS coordinators with the right experts that can get them to the next level,” says NBHA executive director David Lee.

A NBHA video on FLS implementation in a rheumatology/endocrinology setting can be found at: <https://www.youtube.com/watch?v=ESH0b91rCvc>.

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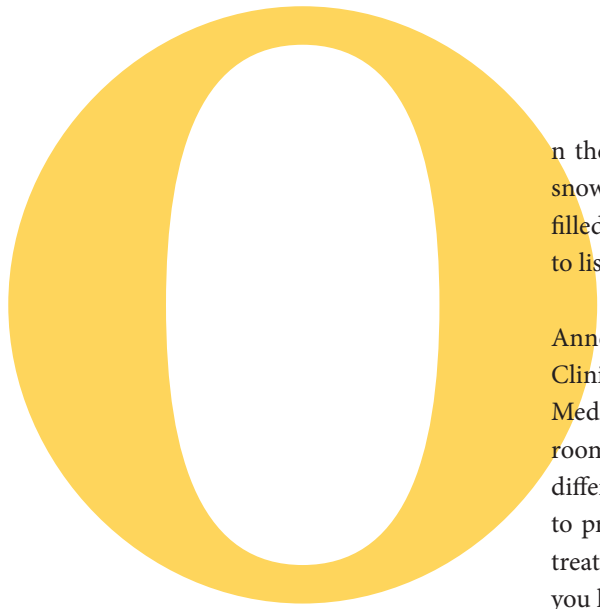
100 YEARS
OF HORMONE SCIENCE TO HEALTH

ENDO 2016: A Centennial Celebration



BY DEREK BAGLEY

As the Endocrine Society celebrated 100 years at **ENDO 2016**, attendees were treated to a cascade of new research. From the ongoing controversy of what constitutes gestational diabetes to the burgeoning research of endocrine-disrupting chemicals, endocrine science was the real star in Boston.



n the afternoon of Sunday, April 3, the day before **ENDO 2016** ended, as snow fell on the Boston Seaport, endocrinologists from around the world filled the seats in room 160 of the Boston Convention and Exhibition Center to listen to the controversial views on treating hypothyroidism in the elderly.

Anne R. Cappola, MD, ScM, a professor of medicine and director of the Clinical and Translational Research Center at the Perelman School of Medicine at the University of Pennsylvania, stood up before the crowded room of researchers and physicians in this meet-the-professor session on different clinical manifestations of hypothyroidism in elderly patients, to present her case studies and poll these doctors on the correct course of treatment. But before Cappola got started, she said with a smile, “I know you had great other choices, so thank you for coming here,” and many in the audience nodded and smiled along and took out their notepads and tablets for another 45 minutes of education and discourse.

And Cappola’s welcoming remark really could be the tag line for any ENDO meeting, always too much to see and do over four days, always a very deep well from which to keep pulling, to help shape ever more groundbreaking ideas on treating endocrine disorders. The Endocrine Society is 100 years old this year, and in that time, there have been some truly revolutionary findings and methods put to use. So it makes sense that **ENDO 2016** was held in Boston, a city itself steeped in history, where people come from all over to follow the red brick road of the Freedom Trail and tour old battleships and dine in restaurants where Ben Franklin once dined, a city that’s no stranger to revolutionary ideas itself.

EDCS IN THE PEDIATRIC ICU

ENDO 2016 was impressive in its reach: This year’s annual meeting boasted more than 9,000 attendees, while millions on social media got to be privy to the science being presented. And, perhaps now more than ever, it was clear how much of a reach endocrinologists have in various healthcare outcomes, the epidemics, and predicted epidemics.

Take for instance the research presented by Sören Verstraete, MD, a PhD student at KU (Katholieke Universiteit) Leuven in Leuven, Belgium, which found that the plastic softeners found in the medical tubes and catheters attached to children in intensive care units were linked to those children developing attention deficit disorders later in life. Verstraete and his team analyzed circulating plasma concentrations of di(2-ethylhexyl)phthalate

“Are you
with that
ENDO
thing?”





(DEHP) — the plastic softener — metabolites in 100 healthy children and 449 children who had been treated in a pediatric intensive care unit (PICU). The levels of DEHP in healthy children were virtually non-existent, while the DEHP found in the PICU-treated children were “sky high.”

“Levels of chemicals from plastic tubes are ‘sky-high’ at first,” Verstraete says, “which makes sense, because the kids are ‘fully lined up.’”

The investigators then statistically analyzed these results, adjusting for initial risk factors for neurocognitive performance, length of stay in the PICU, and complications during treatment. They found that high exposure to DEHP was strongly associated with attention deficit at neurocognitive testing four years after discharge, a result that was validated by another cohort of 221 children treated in PICU.

Verstraete and his team wrote in their conclusion: “Development of alternative plasticizers for this application may be indicated.” However, he goes on to point out that with current technology, it’s difficult to avoid these outcomes. “Alternatives are expensive and leach less,” he says, “but they have not been fully investigated.”

“The number one rule in medicine is do not harm,” Verstraete says, “so we need to ask the question about whether we need to continue using these plastic tubes.”

ALL ENDO 2016 PHOTOGRAPHY BY DAVID TULCHINSKY



RESPECT THE SCIENCE

ENDO 2016 saw a lot of new programs, but none of them were more appreciated by the researchers than the Respect the Science campaign, which was instituted in order to make the exclusive science presented at ENDO just that: Exclusive. Attendees were gently encouraged — via a 48-second video — from recording or photographing any of the research presented to share with colleagues back home. This served as a reminder that some of the material presented at ENDO is confidential and unpublished and should not be a souvenir from Boston!



Early Career *Enthusiast*

The Early Career Forum is an excellent platform for both new and graduating fellows to learn about various aspects of practical endocrinology and network with the leaders in the field. This is an excellent opportunity to discuss the transition between basic, clinical, and translational medicine with physicians and scientists sharing their remarkable experiences and successful collaborations with other specialties.

As a graduating fellow, the tips I received on formatting my curriculum vitae, interviewing, and contract-negotiating skills were extremely helpful. They are instrumental to a successful and satisfying career in this field. All questions were answered in the most simplistic, friendly manner, and the welcoming and pleasant atmosphere helped me interact with likeminded people from different fields and countries! The expectations of a career in research and the role of a clinical scientist were clearly elucidated and will be tremendously helpful in my future career in academic medicine.

In my opinion, this forum is an excellent opportunity for fellows in training — the message is simple and clear — Endocrine Society is here to help!”

— **NIDHI AGRAWAL, MD**, ENDOCRINOLOGY FELLOW,
NYU SCHOOL OF MEDICINE, NEW YORK

ADHD MEDS & BONE LOSS

So there appears to be a link between DEHP — an endocrine-disrupting chemical — and the development of attention deficit disorder, for which children and teenagers often take stimulants to manage. As it turns out, these stimulants may be linked to lower bone density in children and teenagers who take them to control their attention deficit hyperactivity disorder, according to research presented at **ENDO 2016**.

The team, led by Alexis Jamie Feuer, MD, of Weill Cornell Medicine New York Presbyterian in New York, hypothesized that stimulant medications, which release and block re-uptake of dopamine and norepinephrine, may affect bone mass, based on previous animal studies that showed sympathetic nervous system activation led to bone loss. And since ADHD affects more than six million children in the U.S., as Feuer and team point out, “it is important to assess the effects of stimulants on bone mass in this population.”

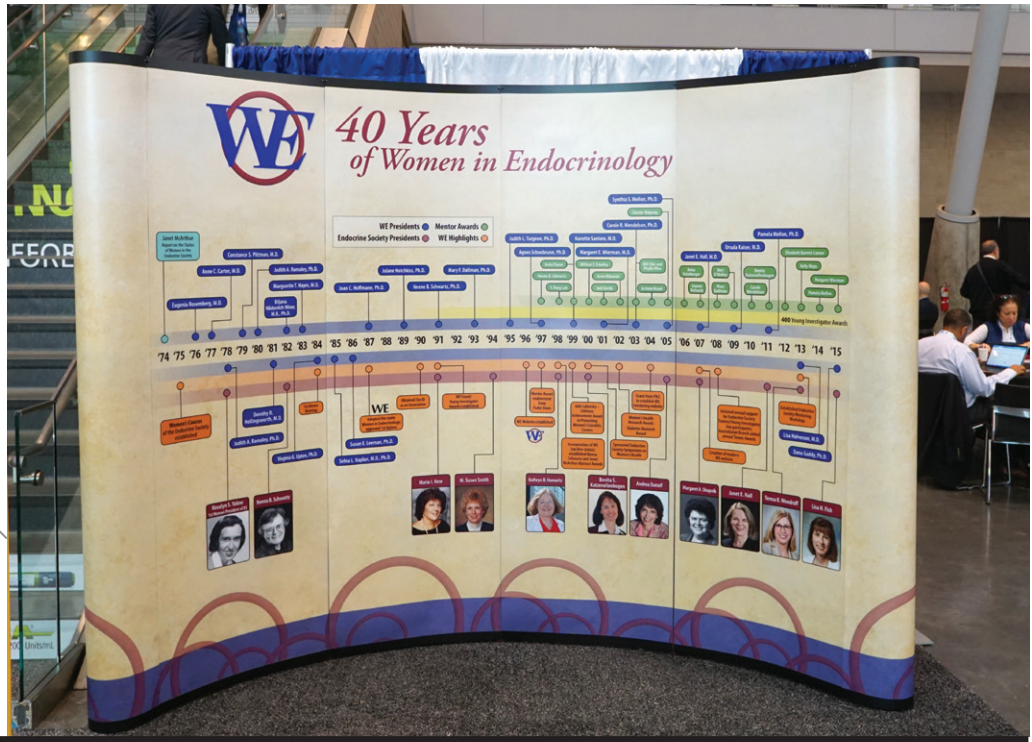
The researchers looked at 6,489 participants of the 2005–2010 National Health and Nutrition Examination Study (NHANES) who had had a dual-energy X-ray absorptiometry (DXA), ages eight to 20, 159 of whom had used stimulants. They found that among stimulant users, the average bone mineral content at the lumbar spine was 5.1% lower than in nonusers and 5.3% lower at the hip. Bone density was 3.9% lower in stimulant users at the spine and 3.7% lower at the hip compared with nonusers.

However, Feuer is careful to say that correlation does not equal causation, that their study does not prove stimulant use causes loss of bone density, and that further research is needed, especially since stimulants are the first-line therapy for ADHD.

OPIOIDS & THE ENDOCRINE SYSTEM

Or take the growing and deepening problem of opioid abuse in the U.S. The Centers for Disease Control and Prevention (CDC) estimated that 78 Americans die every day from an opioid overdose, and that the amount of prescription opioids have quadrupled since 1999, while deaths from opioid abuse

Women in Endocrinology — an organization devoted to promoting and facilitating the professional development and advancement of women in the field of endocrinology — celebrated its 40th anniversary in 2015.



have also quadrupled. This doesn't particularly seem like something endocrinologists should have an interest in, since endocrinologists don't usually prescribe opioids.

But more and more research is highlighting the dangers of opioid abuse beyond addiction and overdose, and the endocrine system isn't spared. "Endocrine consequences of opiate therapy is a hugely neglected area of study," says Ken Ho, MD, of the University of Queensland in Brisbane, Australia. He led a Meet the Professor interactive session, polling the endocrinologists in attendance on which of them prescribe opioids (about half raised their hands), and why. Only one doctor stood up and answered — she has a patient who had thyroid cancer and several surgeries on her neck, which left the patient in chronic pain. Ho nodded and said: "A compassionate reason."

One impact of opiate therapy is that it can lead to hypogonadism in men, which can lead to lower bone density and even osteoporosis, and that can then lead to challenges for the endocrinologist who wants to correct that and get the testosterone levels back to normal. If the patient is put on testosterone therapy, it's hard to get them off the therapy.

In fact, according to a study published in *Endocrine Reviews* by Cassidy Vuong, et al., (which Ho noted in his

presentation), the primary disorder caused by opioid abuse is hypogonadism in men, and they conclude that "[u]sers and abusers must be aware of not only the prevalence of this disorder on their sexual functioning, but also the effects of the opioids on the other hormones in their system, which may lead to harmful long-term effects."

Ho says "there is limited clinical awareness of the impact [of opiate therapy on the endocrine system]," so this is also something more endocrinologists should be paying attention to, especially as the use and abuse of opioids continues to increase in the U.S.

DIABETES: THE PROTOTYPICAL ENDOCRINE DISEASE

And then, of course, there are the twin epidemics of diabetes and obesity, which continue to escalate, although the fight against both diseases continues to progress. Margaret Eckert-Norton, PhD, FNP, a diabetes educator and associate professor of Nursing at St. Joseph's College in Brooklyn, N.Y., says that diabetes is the "prototypical endocrine disease," and the progress made in treating it represents the progress made in endocrinology as a whole.



For example, researchers led by Olivia Farr, PhD, of Beth Israel Deaconess Medical Center and Harvard Medical School in Boston, for the first time ever, studied how the glucagon-like peptide (GLP) analog liraglutide works in the human brain, in order to help patients lose weight and help treat their diabetes.

Farr says that GLP-1 receptors had previously only been found in rodent and primate brains, so she and her team analyzed 22 human brain tissue samples to find GLP-1 receptors, which they did. “This study is novel because it’s the first to look in the human brain,” she says. “GLP-1 receptors exist in the brain cortex.”

With that evidence, the researchers moved on to studying 18 adults with type 2 diabetes, who randomly received either up to 1.8 milligrams of liraglutide or a placebo for 17 days. The participants then had a “wash-out” period for three weeks before receiving the opposite treatment for another 17 days. At the end of each treatment period, the participants were shown images of things like cake and pie (rated as highly desirable

by a panel), salads and fruit (rated as less desirable), and things like plants and office supplies (rated as not desirable), all while undergoing brain scanning with functional magnetic resonance imaging. “The most they talked about were the onion rings,” Farr says.

“Liraglutide decreased activation of the parietal cortex in response to highly desirable as compared to less desirable food images,” the authors write. “In a secondary analysis, we also observe decreased activation in the insula and putamen, areas involved in the reward system. Furthermore, we show that increased ratings of hunger and appetite correlate with increased brain activations in parietal and visual cortices to highly desirable food cues while on liraglutide.”

Farr and her team write that further studies are needed to “extend these findings to larger samples of higher doses of liraglutide (3 mg) recently approved for obesity.” Still, these findings are promising, and it’s another step toward treating diabetes and obesity even more efficiently.

STANDING ROOM ONLY

BY MARK A. NEWMAN



The debut of Knock Out (K/O) Rounds at ENDO 2016 gave young basic scientists a chance to shine and turned out to be a crowd-pleasing success!

On Saturday April 2, the tension was building in room 254 of the Boston Convention Center. The seating was standing room only. The crowd was abuzz with what they were about to see.

Welcome to the first ever “Knock Out Rounds – Why Endocrine Science Matters in 3 Minutes,” which pitted 14 young basic science researchers against each other to present short, focused presentations highlighting the rationale for their science rather than strictly focusing on the outcomes. The room was packed with other young scientists, mentors, interested attendees, and general well-wishers.

Serving on the panel of judges were Gary Hammer, MD, PhD, Millie Schembechler Professor of Adrenal Cancer; director – Endocrine Oncology Program, University of Michigan, Ann Arbor; Carol Lange, PhD, University of Minnesota and vice president (basic science) for the Endocrine Society; and yours truly. The event was kept on track and on time by the Endocrine Society’s own director of communications and media relations, Aaron Lohr.

Lange says she thought the event was so popular because the crowd also got to vote on who they thought gave the most compelling presentation. “It was fun to have the audience participate by using their phones,” she says, adding that “they all had to pay close attention. The rapid-fire format pitched to a broad audience is a great way to learn. Everyone – including the judges! – learned a lot in a short time.”

Hammer concurs and says the K/O Rounds were a “smashing success” since it combined a TED Talk and the TV talent

competition *The Voice*, and scientists had to tell the story of their scientific abstract to a “lay” audience using only one slide in a total of three minutes.

“Being able to distill a scientific experiment, discovery, and/or conclusion down to the essential take-home messages is an increasingly important skill as the attention span of our ‘click through’ social media society decreases at lightning speed,” Hammer says. “Scientists used all sorts of analogies, simple graphics, and real life implications of their work to explain complicated basic science ideas to the crowd.”

The three judges scored the speakers on a scale of 1 – 5 in three categories: oral delivery, graphics, and ability to position their work in broader “translational” and societal perspective.



The winner of the competition was Kristen Vella, PhD, an instructor at Beth Israel Deaconess Medical Center and Harvard Medical School, who actually stepped in at the last minute for Rodrigo Rorato, PhD, who could not make it to Boston. Her talk was about how the brain controls

thyroid hormone levels through a variety of mechanisms. “I approached assembling my three-minute talk by talking with my friends, some scientists, and some non-scientists,” Vella explains. “In the process of describing the study and why we do it, I was able to pinpoint what was critical to understanding the goal of our research. I want to thank them all for their support. And I’d like to thank the Endocrine Society for providing this opportunity for early career scientists.”

“The K/O Rounds are an excellent addition to the ENDO program.”



The second place winner was Graham L. Jones, a PhD candidate in the neuroscience graduate program at the University of Michigan, who spoke about a dynamic hypothalamic neurotransmitter network. According to Jones, condensing one's research into a three-minute sound bite is

an exercise that all researchers can benefit from. "Too often we get caught up in the details and fail to take a step back and put the work that we are passionate about into a context that everyone can appreciate," he says. "Furthermore, the atmosphere was invigorating. It was great to have such an excellent turnout, especially one where the entire audience was able to participate as well. I'm excited to see how the event evolves in the future!"

Coming in third place was a tie with Leonard Cheung, PhD, from the University of Michigan, and Juliet Ann Brown from Michigan State University in East Lansing. Cheung spoke about how different organs acquire their individual identities, and Brown's talk was entitled "Motivated Behavior and Obesity: Hormones Matter."

There was even a "People's Choice Award." This was voted on by the attendees in the room who used their smartphones or other handheld devices to cast their votes after each speaker via the **ENDO 2016** app. Hillary Lauren Woodworth was the crowd favorite, and her talk was entitled "Tipping the Scale

with Neurotensin and Dopamine: A Potential Strategy to Prevent Weight Gain." "I think the audience had a lot of fun participating in the session, and I was honored to receive the People's Choice Award," Woodworth says. "I wasn't expecting how difficult it would be to present my research in plain language with only three minutes, but all of the presenters rose to the challenge, which made for a really enjoyable and informative session!"

The event was so successful that there are plans brewing to not only continue K/O Rounds for basic scientists, but for clinicians as well. "As the overall chair for the upcoming **ENDO 2017** and one of the three judges in the **ENDO 2016** K/O round competition, I must say that we were incredibly impressed and delighted at the crowd response," Hammer says. "We will be looking for ways to enhance and expand upon the K/O scale of presentations at **ENDO 2017**."

"The K/O Rounds are an excellent addition to the ENDO program," Vella says. "It was an honor to present alongside such strong scientists in endocrinology. Communication is key to the longevity of science and to garnering support from funding institutions, from your colleagues, or importantly, from the public."

Lange adds that there was so much energy in the room because it was such a lively and exciting session. "That kind of boost is always good in the middle of the day anywhere, including at ENDO!" she says.

K/O ROUNDS 2016 PARTICIPANTS

Hillary Lauren Woodworth, BS, Physiology,
Michigan State University, East Lansing, MI

Hatice Duygu Saatcioglu, Pathology, UT
Southwestern Medical Center, Dallas, TX

Ana Cheong, Department of Environmental
Health, University of Cincinnati College of
Medicine, Cincinnati, OH

Sasha Howard, MD, Centre for Endocrinology,
William Harvey Research Institute, Barts and the
London School of Medicine and Dentistry, Queen
Mary University of London, London, United
Kingdom

Qing He, PhD, Endocrine Unit, Department of
Medicine, Massachusetts General Hospital and
Harvard Medical School, Boston, MA

Leonard Cheung, PhD, Human Genetics,
University of Michigan, Ann Arbor, MI

Graham L. Jones, Neuroscience Graduate
Program; Molecular and Integrative Physiology,
University of Michigan, Ann Arbor, MI

Rucha Patel, PhD, Pharmaceutical Sciences,
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Hana Vakili, Internal Medicine, University of
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Erik G. Strungs, Department of Medicine,
Medical University of South Carolina,
Charleston, SC

Jia Zheng, Department of Endocrinology, Key
Laboratory of Endocrinology, Ministry of Health,
Peking Union Medical College Hospital, Diabetes
Research Center of Chinese Academy of Medical
Sciences & Peking Union Medical College,
Beijing, China

Anyonya R. Guntur, Maine Medical Center
Research Institute, Maine Medical Center,
Scarborough, ME

Rodrigo Rorato, PhD, and Kristen R. Vella,
PhD, Division of Endocrinology, Diabetes and
Metabolism, Beth Israel Deaconess Medical
Center and Harvard Medical School, Boston, MA

Juliette Anne Brown, BS, Pharmacology and
Toxicology, Michigan State University, East
Lansing, MI

THE GESTATIONAL DIABETES & BABY BMI CONTROVERSIES

And yet, there is still some confusion and controversy relating to diabetes, especially as it applies to maternal-fetal medicine. According to Linda Barbour, MD, of the University of Colorado School of Medicine, in the realm of maternal-fetal medicine, diagnosing gestational diabetes (GDM) is an “incredibly controversial subject” and “has the least consensus of anything else.”

As Barbour explained in her Meet-the-Professor session, the medical community is now realizing that intrauterine health can determine long-term health, so it's important to optimize intrauterine health. However, the optimal diagnosis and treatment plans for GDM are “up for grabs right now, depending on which society you have allegiance to,” she says.

But Barbour says that now, with the obesity epidemic, women who are thought to have GDM, more often than not have prediabetes, on their way to developing type 2 diabetes. What's more, obese mothers are at a higher risk of having babies with excess fat, which could then lead to that child becoming obese and developing type 2 diabetes later in life. “I think we really need to target all women,” Barbour says. “I think we need to be doing this diet — we need to be doing what we do for all obese women, all women with risk, rather than with just GDM.”

And what of the babies born with excess adiposity? Researchers led by Allison Smego, MD, a pediatric endocrinology fellow at the Cincinnati Children's Hospital Medical Center — with a study that's sure to raise a few eyebrows — say that since body mass index (BMI) “trajectories in children who become severely obese by age [six] differ from children who remain normal weight as early as [four to six] months of age,” it would be prudent to measure a child's BMI at as early as six months old.

Smego and her team, analyzing growth data of two groups of patients (one group of 480 severely obese children and one group of 783 lean children) up to six years of age, found that measuring BMI in children between six and 18 months of age accurately predicts early-childhood obesity.

Of course, Smego says, that doesn't mean the physician or the parents should immediately put an at-risk child on some sort of special diet and that they should “make sure kids at six months are on an age-appropriate diet, but continue to follow [the child's progress] closely.”

“We want this to be used in the primary care setting,” Smego says. “We don't really want [children] to get to an endocrinologist.”



A Reenergizing Experience

I returned from **ENDO 2016** with new energy. In the KO Rounds, 15 scientists had three minutes to present their work in layman's terms. I was lucky to be one of the presenters. I was fascinated by the depth and breadth of the session, and I was inspired to think about different approaches to my science (when I wasn't fretting over my presentation).

At the poster sessions, I was truly impressed with the amount of innovative science presented. Thank you to everyone who took me through his or her posters and answered my questions about new assays, new imaging techniques, and new pathways. I was very excited to get back to the lab and apply what I learned.

As an early career scientist looking for a tenure-track faculty position, I attended the Career Development Workshop "Navigating Career Transitions: Lessons Learned as a New PI." This session was perfectly timed for where I am in my career. The panel answered a diverse set of questions from interviewing to setting up a lab. I appreciated both the realistic and positive attitude the panel had toward academic science.

Lastly, thank you, Hormone Health Network, for the cake pop and the **Essential Guide to Your Hormones!**"

— **KRISTEN VELLA, PHD**, BETH ISRAEL DEACONESS MEDICAL CENTER, HARVARD MEDICAL SCHOOL

PRESERVING FERTILITY VIA OVARIAN BIOPROSTHESIS

One of the most exciting scientific discoveries revealed at **ENDO 2016** could give new hope to women who might have lost their fertility due to cancer treatment. In her session, "Oncofertility: Fertility Preservation and Restoration Toward an Ovarian Bioprosthesis," Society Past-President Teresa K. Woodruff, PhD, director of the Women's Health Research Institute, chief of Obstetrics and Gynecology-Fertility Preservation, and Thomas J. Watkins, Memorial Professor of Obstetrics and Gynecology at Northwestern University, spoke about a successful ovarian bioprosthesis in a mouse model and translating that research into humans. This would allow women to have their ovarian tissue harvested and stored before cancer treatment so that fertility and normal hormonal activity could be restored post-treatment.

"We can, in fact, provide fertility for these women using existing techniques," Woodruff says. "There have been more than 60 live births to cancer patients who have used fertility restoration techniques. But there is always a concern that implantation of preserved ovarian tissue will also reintroduce cancer. The need to restore fertility far exceeds our current abilities."

Woodruff detailed the successful restoration of fertility in mice through the use of both *in vitro* oocyte preservation, maturation, and fertilization techniques as well as the creation of a biologic prosthetic ovary. While traditional methods — egg harvesting and banking; *in vitro* fertilization and embryo banking before treatment — are recognized treatment options, this new research could point to fertility restoration in the event these other options are not successful.

This research is also a valuable option for patients who underwent cancer therapy as children, which resulted in infertility or difficulty in becoming pregnant. "Resurgence of cancer is a real risk for some patients," Woodruff says. "We want to find ways to restore the normal hormonal cycles without that risk." It is possible to isolate individual follicles and mature them *in vitro*, a process known as encapsulated *in vitro* follicle growth (eIVFG), which can support *in vitro* ovulation and luteinization, at least in mice, leading to live birth of fertile offspring.



Research is ongoing into a similar eIVFG system using human tissue. It may be possible to produce an ovary in a dish, but a prosthetic ovary could meet ongoing hormonal needs as well as fertility preservation. According to Woodruff, an engineered ovary would require three types of specialized cells: oocytes, granulosa cells, and theca cells, which can be isolated or cultured from patient tissue or derived from human stem cells.

“We are on the way to developing a prosthesis that may maintain fertility in humans as well,” Woodruff says. “Combined with better cancer control and treatment in the future and neo-adjuvant fertoprotective agents, we may be able to eliminate the field of oncofertility altogether and get back to simple reproductive biology.”

THAT ENDO THING


And again, there were too many great choices to attend it all, and this is all a very small taste of the variety of the scientific research that was presented at **ENDO 2016**. The scientific program aside, there were myriad announcements and events that took place that made the Endocrine Society’s Centennial Celebration even more remarkable.

On the first day of **ENDO 2016**, it was announced to a standing-room-only crowd at the Presidential Plenary that the Society is launching its very first Open Access journal in the fall. The *Journal of the Endocrine Society (JES)* will be led by inaugural editor-in-chief and past-president, Larry Jameson, MD, PhD, executive vice president of the University of Pennsylvania for the Health System and dean

of the Perelman School of Medicine at the University of Pennsylvania (see “Brave New World,” p. 72).

Also at the Presidential Plenary was the announcement of the John D. Baxter Prize for Entrepreneurship from a \$1.2 million gift to the Endocrine Society from the family of the late John D. Baxter, MD. This new prize will reward scientists and clinicians alike who have shown an affinity for entrepreneurship and innovation while furthering endocrine research into patient care (see “InTouch,” p. 17).

Making its heralded debut in Boston was the first ever “Knock Out (K/O) Rounds — Why Endocrine Science Matters in 3 Minutes,” an event that pitted over a dozen early career basic scientists against each other to prove why their research was key to their results, rather than simply emphasizing their findings. A packed room that barely contained an enthusiastic crowd has ensured that this was not the last time K/O Rounds will be presented at ENDO! (See “Standing Room Only,” p. 65)

Aside from educating members of the scientific community from around the world, the advances in endocrine science were also presented to 50 journalists who attended sessions and press conferences that have resulted in over 1,800 news articles so far, with stories on CNN, the *Washington Post*, the *New York Times*, CBS, *TIME* magazine, and more. Furthermore, the event lit up social media resulting in over 8 million Twitter impressions! Locally, **ENDO 2016** made quite the impression as well, so much so that it seems like everywhere you went in Boston, the locals were asking, “Are you with that ENDO thing?” 

EDITOR’S NOTE: PORTIONS OF THE “PRESERVING FERTILITY VIA OVARIAN BIOPROSTHESIS” SECTION ORIGINALLY APPEARED IN THE ENDO DAILY NEWSPAPER WRITTEN BY FRED GEBHART.

Brave *New* World:

Introducing the *Journal of the Endocrine Society*

BY MARK A. NEWMAN

THE ENDOCRINE
SOCIETY IS
LAUNCHING
ITS FIRST
OPEN ACCESS
JOURNAL AND
ITS FIRST NEW
JOURNAL IN
OVER 30 YEARS.

The Endocrine Society will expand its publication offerings to authors and readers with an Open Access (OA) journal to begin publishing in fall 2016.

The new journal, the *Journal of the Endocrine Society* (*JES*) — will be led by editor-in-chief and Society Past-President Larry Jameson, MD, PhD, executive vice president of the University of Pennsylvania for the Health System and dean of the Perelman School of Medicine at the University of Pennsylvania, along with a team of associate editors currently being assembled. In-house, newly hired executive editor Timothy Beardsley, DPhil, will manage the journal's day-to-day operations (See "InTouch," p. 8).

As the inaugural editor-in-chief, Jameson is excited by the prospects that new endocrinology discoveries will be available as quickly as possible after peer review and editorial assessment. He adds that the open-access format will allow research articles, case reports, images, and other features of interest to be available to readers worldwide, "fulfilling a goal to provide ready access to high-quality information for all physicians, scientists, students, and the public."

JES will publish top-quality research in all areas of basic, translational, and clinical endocrinology. The journal will provide rapid peer review and continuous online publication of accepted edited articles for citation, indexing, and discoverability. Scope will include research articles as well as reports, mini-reviews, commentaries, tools and methods, datasets, and other contributions that advance the field of endocrinology.

The OA format of *JES* will make it possible for the Society to publish high-quality scientific research papers without being restricted by the page limitations of a print journal. The new journal will create the opportunity for more scientists to publish their work and offer an avenue for cutting-edge research to advance science and improve medical care.

"Open Access publishing gives the public free global access to peer-reviewed content online," says Richard O'Grady, PhD, the Society's Chief Publications Officer. "It gives authors' work increased speed to publication, exposure and discoverability, and compliance with relevant grant rules."

Sign up for updates about the new OA journal at www.endocrine.org/jesopenaccess.

Q&A with Larry Jameson, MD, PhD

If you attended ENDO 2016 in Boston last month, then you know that the excitement surrounding the launch of the *Journal of the Endocrine Society (JES)* was one of the major revelations this year, aside from the remarkable scientific content presented.

To mark this momentous event and to give *JES* the gravitas it deserves, Larry Jameson, MD, PhD, will serve as the inaugural editor-in-chief of this new journal. Jameson became executive vice president of the University of Pennsylvania for the Health System and dean of the Raymond and Ruth Perelman School of Medicine in 2011. Prior to that he was dean of the Feinberg School of Medicine and vice president of Medical Affairs at Northwestern University since 2007. He joined Northwestern University Medical School in 1993 as chief of the Division of Endocrinology, Metabolism, and Molecular Medicine, a position he held for seven years. In 2000, he was named Irving S. Cutter Professor of Medicine and chair of the Department of Medicine.

He received his medical degree with honors and a doctoral degree in biochemistry from the University of North Carolina in 1981. He completed clinical training in internal medicine and endocrinology at Massachusetts General Hospital in Boston. Before leaving for Northwestern University, he rose through the ranks at Harvard Medical School to become an associate professor of medicine and chief of the Thyroid Unit at Massachusetts General Hospital.

A prolific physician-scientist and writer, Jameson has been a pioneer in molecular medicine in the field of endocrinology. His research has focused on the genetic basis of hormonal disorders, and he is the author of more than 300 scientific articles and chapters. His work has been published in leading peer-reviewed journals, and he is an editor of *Harrison's Principles of Internal Medicine*, the most widely used medical text worldwide, and co-editor of *Jameson and DeGroot's Endocrinology*, now in its sixth edition.

Jameson took time out of his busy schedule to discuss his new role — among many, many roles in the world of endocrinology — as the editor-in-chief of *JES*, and what he hopes to accomplish, not just for the journal and the Endocrine Society, but for the field of endocrinology both here and around the world.

Endocrine News: Why is it important for the Endocrine Society to have an Open Access journal?

Larry Jameson: Open Access is a new, and I believe important, model for disseminating information. The Endocrine Society has always been a leader in publishing in the field of endocrinology. The *Journal of the Endocrine Society* will be the Society's first new journal in more than 30 years. OA means that anyone with access to the Internet can read papers in *JES*. This not only provides greater equity across the globe but also ensures that our authors' papers will have a larger audience and likely citations.



Editor-in-chief and
Society Past-President
Larry Jameson, MD, PhD,

“ I want to support endocrinologists and scientists interested in hormone physiology and clinical care by providing a top-tier outlet for their scholarly work, to be read and cited by physicians, trainees, and the lay public worldwide.”

“ I am deeply committed to the mission and success of the Endocrine Society, which I consider my home as a professional organization.”

EN: How will the *Journal of the Endocrine Society's* content differ from the content in the other Society journals?

LJ: *JES* will publish the full range of content in the field of endocrinology, including basic science and clinical endocrinology, mirroring the interests of our membership. The OA format, being entirely online, creates flexibility in the types of publications, as well as the number of publications. For example, in addition to original research, case reports, mini-reviews, editorials, and Society position papers, we plan to publish images, databases, and create interactive media.


EN: What intrigued you about becoming the editor-in-chief of *JES*?

LJ: Three main features intrigued me about launching *JES* as its inaugural editor-in-chief: 1. Like all of our members, I am deeply committed to the mission and success of the Endocrine Society, which I consider my home as a professional organization; 2. I believe *JES* will serve as a great equalizer in terms of access to high-quality information worldwide; 3. Having served in other editorial capacities for textbooks and journals, I am eager to engage in the new OA model of publishing. I am confident that *JES* will be very successful and perhaps pave the way for the evolution of other Society journals.

EN: What are your overall goals for *JES*?

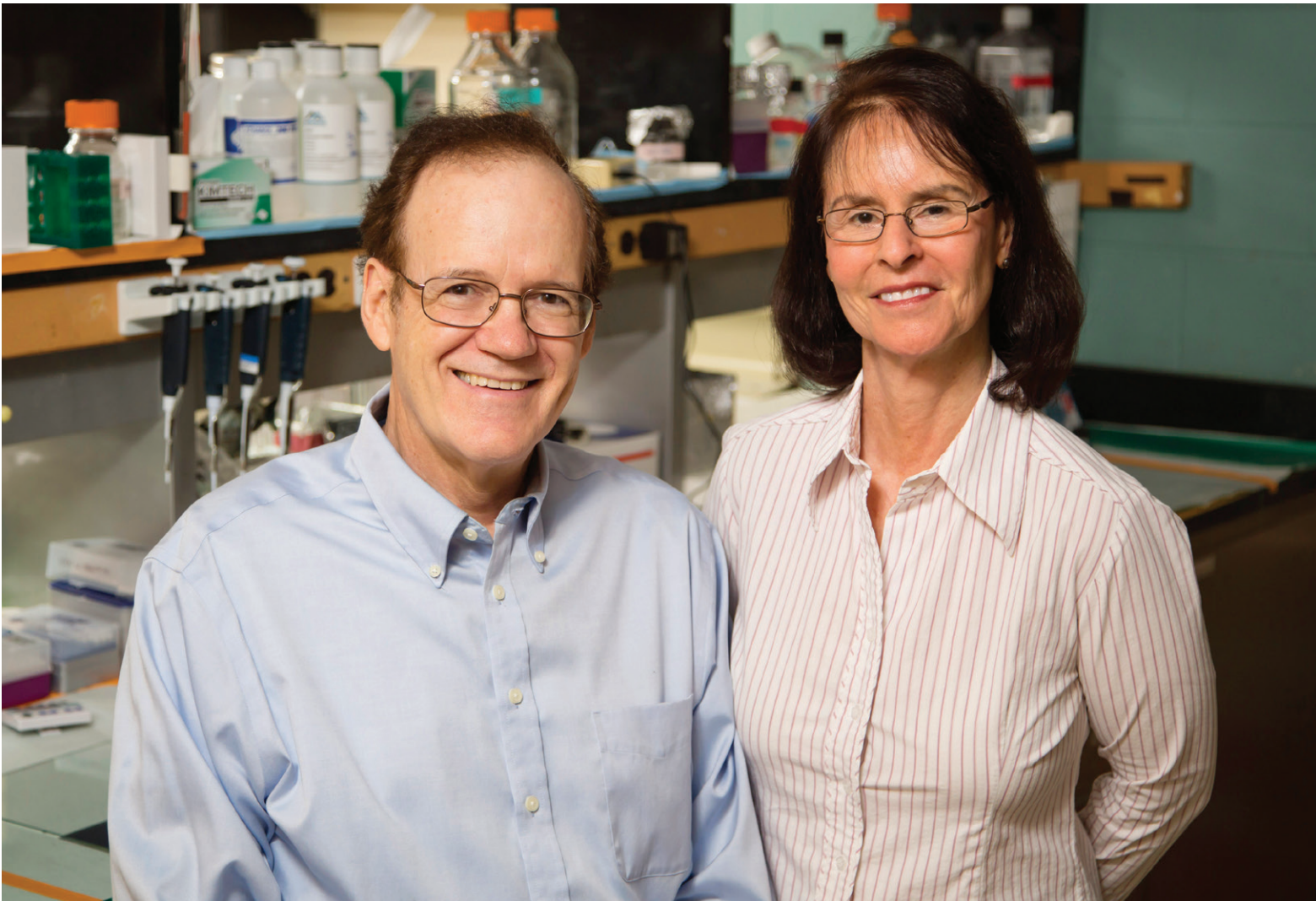
LJ: First, I am assembling a renowned group of associate editors (AEs) with a broad international footprint and range of interests within domains of endocrinology. This international group of AEs will attract a broader base of submissions and reviewers. Second, I want to ensure that *JES* sets high standards for peer review and its accepted papers, consistent with the values of the Endocrine Society for all of its publications and meetings. Third, I want to support endocrinologists and scientists interested in hormone physiology and clinical care by providing a top-tier outlet for their scholarly work, to be read and cited by physicians, trainees, and the lay public worldwide. Fourth, I want to shorten the time for review and publication; and finally, to expand knowledge and improve health by ensuring broad access to discoveries, evidence, and best practices in endocrinology.

Throughout his storied career, Jameson has received many distinguished awards, including the Van Meter Award from the American Thyroid Association and the Sheen Award from the American College of Surgeons. The Endocrine Society has honored him with the Ernst Oppenheimer Award, presented to a young investigator in recognition of meritorious accomplishments in basic or clinical endocrinology, and the Fred Conrad Koch Award, considered the highest honor bestowed by the Society in recognition of exceptional contributions to the field.

“The Endocrine Society has always been at the forefront of disseminating knowledge in our field,” Jameson adds. “The launch of the new Open Access journal is only the latest example of how the Society continues to support the needs and interests of endocrinologists worldwide.” 

LAB Partners

BY MELISSA MAPES



John and Benita Katzenellenbogen, PhDs, are partners in both life and in the lab. *Endocrine News* asked this award-winning couple about their careers, their research, and, of course, how they met.

A UNITING MENTOR

John and Benita took different paths to the field of endocrinology, which allowed them to contribute unique skillsets to their research. Benita found herself drawn to the powerful actions of hormones during her doctoral studies with Fotis Kafatos, PhD, so she decided to pursue a postdoctoral spot in the famed lab of the late Jack Gorski, PhD, at the University of Illinois.

While she investigated estrogen actions in the uterus, John also became one of Gorski's mentees — figuring out how to apply his training with Nobel Prize winner E. J. Corey, PhD, in synthetic organic chemistry and natural products synthesis to biological problems. With Gorski's encouragement, he began developing chemical tools to study nuclear hormone receptors, starting with affinity labeling reagents that could tag estrogen receptors through covalent bonds.

And thus, under the shared guidance of Jack Gorski, the pair launched a lifetime of achievement together.

For the first time in history, the Endocrine Society's 2016 Fred Conrad Koch Lifetime Achievement Award was given to a married couple, Benita and John Katzenellenbogen, PhDs — both researchers at the University of Illinois. The pair has spent 40 years as partners in both science and life, during which they have vastly expanded our knowledge of steroid hormones and receptors.

The Katzenellenbogens began collaborating during their graduate studies at Harvard. Since then, they've built decorated careers through both independent and joint projects. The couple shared the stories behind their success with *Endocrine News*, in addition to some of their goals for the future.

EN: When did you two first start collaborating? How do you balance your collaborations with your independent projects?

BENITA: John and I collaborate when cross-disciplinary chemical and biological expertise benefit the project. Early on, the use of affinity labels for the estrogen receptor (ER) made in John's lab enabled us to characterize the size, half-life, and dynamics of estrogen receptors in a variety of target cells before the receptor was cloned. We were also able to utilize ligands highly selective for ER α or ER β to find the distinct biologies mediated by these two receptors.

More recently, we've examined extranuclear and nuclear initiated actions of ERs and their beneficial tissue-selective actions with probes made in John's lab. We've learned a great deal by providing these reagents to other labs worldwide as well.

JOHN: When we were graduate students at Harvard, I'd suggest chemical tricks that could help Benita's research in biology. We began more serious collaboration after she finished her postdoc and became a faculty member at Illinois, and we've worked together on various projects ever since.

EN: Which projects do you think have shaped your careers the most, and why?

BENITA: A formative part of our careers has been our research on fundamental aspects of structure-function relationships and mechanisms of action of the steroid hormone receptors — especially estrogen receptors ER α and ER β .

I also have a longstanding interest in the molecular basis of action of SERMs, such as tamoxifen and raloxifene, in breast cancer treatment and prevention. We've been trying to understand the changes in breast cancers that make them less responsive to endocrine treatments in hopes of restoring sensitivity to these generally well-tolerated agents.

A particularly exciting aspect of my work took off in the early 1990s while researching structure-activity relationships in the estrogen receptor by both random and site-directed mutagenesis. In this way, my lab identified amino acids and regions critical

for hormone binding and for transactivation. We also identified and characterized some constitutively active estrogen receptors that are now being found in a large proportion of patients with ER-containing metastatic breast cancers exhibiting endocrine therapy-resistant disease. We hope our findings will enable better treatments for such patients.

JOHN: Working together on the first really effective affinity label for the estrogen receptor, tamoxifen aziridine, allowed us to gather some of the first information on the residues in contact with the ligand even before any structural information was available.

When the receptor was cloned, we worked together to probe how different ligands bound to the receptor. And for some time, we have been engaged in a series of studies to develop ligands that are selective for the receptor subtypes and that have beneficial patterns of selectivity for various diseases.

I've also worked on developing of fluorine-18 labeled steroids to image estrogen, progesterone, and androgen receptors through positron emission tomography (PET) in both breast and prostate cancers. These PET imaging agents will hopefully improve staging and characterizing of the endocrine sensitivity of these cancers, and also assist in the development of new therapy agents.

EN: What are you currently working on? And where do you see your research heading in the future?

BENITA: I'm interested in understanding molecular and cellular aspects that underlie endocrine resistance. We also have a great interest in endometriosis, including the design of novel ligands to find new therapeutic approaches.

JOHN: We just completed a study of how these novel ligands have beneficial effects in an animal model of endometriosis. We're also currently investigating novel ligands to inhibit some forms of the receptor found in recurrent metastatic breast cancer — cases that are resistant to the usual antiestrogens because they have activating mutations.

Another active collaboration involves structurally unique estrogens that selectively activate the non-genomic pathway of estrogen receptor action and support bone, metabolic, and

cardiovascular health without stimulating the reproductive system and breast cancers.

EN: What advice do you have for aspiring researchers? Any advice on working with a spouse or on collaborating in general?

BENITA: Choose a research area that really excites you and has important questions that need answers. The life of a researcher has many challenges, but I've found my research enjoyable and meaningful because it may have a beneficial impact on people. The combination of research with training and teaching has made for a fulfilling career.

Collaborations with many other scientists throughout the world, including those with my husband's research group, have enabled my lab's science to move ahead in multifaceted and fruitful ways.


JOHN: When you're starting out, look for something that's new and different from the studies during your training, and then choose an intriguing topic to which you may offer special insight and make a unique contribution.

The scope of research in endocrinology and biomedical science is enormous. The field benefits from diverse subfields and contributions from a whole array of technologies. Good collaborations occur when both parties share an interest but bring different strengths to the problem, which enables you to do far more than you could on your own. This way, both parties benefit and receive recognition.

Having a spouse as a collaborator has definite advantages, though it can be difficult to get away from work discussions!

EN: How do you feel about receiving the Fred Conrad Koch Lifetime Achievement Award?

BENITA: This recognition is a huge honor. We're especially thankful to our trainees past and present. It has been a great source of happiness for us to see them go on to lead their own successful and independent careers.

JOHN: This is the highest honor that I can imagine receiving, and I am extremely delighted to share it with Benita. 

Congress Considers Funding Bills; NIH Support at Risk



The federal appropriations season — when members of the U.S. House of Representatives and Senate develop and vote on spending bills to fund all federal programs — is upon Washington, D.C.

House and Senate Appropriations Committees have begun to consider spending bills for fiscal year (FY) 2017. In the Senate, there is a fever pitch to quickly address the bills. Senate Majority Leader Mitch McConnell (R-KY) has suggested devoting the next 12 weeks to the spending measures. The chief House appropriator Hal Rogers (R-KY) is targeting completed committee action in June. However, the election-shortened congressional calendar provides little leeway to accommodate the spending bills and action on other measures. Congress is scheduled to leave town by mid-July and not return until early September, with just four weeks to go until current government funding lapses October 1. Additionally, quick initial action on spending measures — beginning in the Senate in late April — prior to an intra-party GOP agreement on budgetary spending levels, shifts contentious decisions to later in the year, closer to Election Day. This means that final funding bills, particularly the measure that funds National Institutes of Health (NIH), may be held up until after the elections. It is possible that we reach October 1 without a funding bill in place, which would necessitate at least a short-term stopgap funding bill to avoid a federal government shutdown.

The Endocrine Society is highly involved in the appropriations process because this is how many key programs for our members get funding. Funding for the NIH is always a top priority, and the Society is a leading advocate, explaining to Congress the value of NIH research, accomplishments in endocrine research, and potential endocrine research opportunities.

In addition to our grassroots advocacy campaign, the Society has submitted testimony to the Appropriations Committees in the House and Senate advocating for \$35 billion for the NIH. (A copy of the testimony is available on the Society website www.endocrine.org under the advocacy button.) Society members also are participating in a Hill Day at the end of April where they will share how they use NIH funding.

Make Your Voice Heard

As Congress begins its annual funding process, there are some worrisome signs for how the NIH funding may fare this year. Last year, with tremendous advocacy by the Endocrine Society and others in the research community, the NIH received a \$2 billion increase. This year, the Senate has already indicated that the committee that develops spending for health and education programs, including the NIH, will receive \$200 million less than last year. In the House of Representatives, several fiscally conservative members are also calling for trimming the budget. As a result, it will be critical that Endocrine Society members interested in the NIH urge Congress to support it. We encourage you to join our online campaign at www.endocrine.org/advocacy to send an email to your representative and senators. Our advocacy software will generate a letter for you; all you need to do is provide your zip code. This will not take much time but will have significant impact.

Society Presence at Congressional Hearings

Recently, the Society also helped prompt questions at House and Senate Appropriations Subcommittee hearings to discuss the NIH FY 2017 budget request to highlight exciting endocrine research. The director of the NIH, Francis Collins, MD, was joined by the directors of several component institutes and centers to answer questions from members of Congress about NIH priorities and research advances.

The chairs of the Labor, Health, and Human Services (LHHS) subcommittees for the House (Tom Cole, R-OK) and Senate (Roy Blunt R-MO) each expressed pride in being able to increase NIH funding in FY 2016. They reinforced the need to ensure that the basic biomedical research base is sustained in future years through the appropriations process and remarked on the importance of supporting the next generation of researchers toward finding future cures. However, legislators in both hearings expressed disappointment that the president's budget proposed a cut to the NIH appropriation of \$1 billion in FY 2017. There was strong bipartisan support to ensure that the proposed cut would not be realized.

Collins delivered prepared testimony during the hearings where he discussed 10 areas where he anticipates major progress in the next 10 years

if the NIH receives adequate funding. One of his key predictions was the “introduction of a safe and effective artificial pancreas” for patients with diabetes, a top priority of the Society. He also mentioned that he sees significant promise for research on diabetes, generally. Senator Jeanne Shaheen (D-NH) was particularly enthusiastic about the potential to improve care for patients with diabetes and asked Collins how he could accelerate the time frame for progress in this area. Collins maintained that the NIH needs steady and sustainable funding trajectories to support research. Specifically, he suggested that yearly increases of 5% would be a sustainable trajectory for the NIH.

During the Senate hearing specifically, representatives also discussed two additional Endocrine Society priorities: the importance of funding the next generation of biomedical researchers, and the need to support basic research. Collins described methods that the NIH uses to support early career investigators by giving them preferential treatment during grant review. Several of the NIH representatives, including Collins, spoke in support of basic research as fundamentally important for downstream advances that result in new cures and therapies. Walter Koroshetz, MD, director of the National Institute of Neurological Disorders and Stroke, stressed that the unpredictable nature of basic research was necessary to explore new opportunities and frontiers. Blunt agreed, stating that you “can’t prescribe results.”

During the House hearing, Congresswoman Rosa DeLauro (D-CT) brought up the new NIH policy to require applicants to report plans to include males and females in preclinical research studies and stressed that this was an important issue for her and Congresswoman Nita Lowey (D-NY). Collins confirmed that the focus on male animals and cells in research has resulted in researchers missing important sex differences

that might be critical for human treatments and cures and discussed the implementation of the new NIH policy.

Keeping Research Momentum

Lawmakers also debated the prospect of replacing appropriated funds with mandatory funds, as proposed in the president’s budget. Collins shared his concern about the prospect of a cut to the NIH appropriation, suggesting that a \$1 billion cut would result in substantial reductions to new and competing grants, damaging the momentum gained from the increase to the NIH budget in FY 2016. He indicated that mandatory funds might be used for certain projects with discrete time frames; however, mandatory funds would not be an adequate replacement for discretionary funds typically to support the NIH.

The Endocrine Society is encouraged that the director’s comments reflected the advocacy priorities of Society members and that senators asked questions recommended by the Society. We have long supported the adoption of artificial pancreas technology through our advocacy program, and we are glad that Collins recognizes the potential of this groundbreaking technology on the lives of patients.

Furthermore, the Society has been a leader in advocating for balancing the study of males and females in all phases of biomedical research. We also have advocated for steady increases in funding that would allow the NIH grant success rate to return to a more sustainable level. The Society’s impact in these areas is a direct result of the advocacy of our members through our e-mail campaigns, Capitol Hill days, and letters to legislators. Visit the Endocrine Society’s advocacy webpage at <https://www.endocrine.org/advocacy-and-outreach> to learn how you can participate.

Advocacy Yields Victories in Diabetes Prevention and Care

Over the past few months, the Endocrine Society has had several successes on the advocacy front in improving care for patients with diabetes. The U.S. Preventive Services Task Force released final recommendations for type 2 diabetes, which dramatically expand preventive screening for populations at risk for the disease. Appropriations for the National Diabetes Prevention Program (NDPP) were doubled for FY 2016. And last month, the Secretary of the Department of Health and Human Services (HHS), Sylvia Mathews Burwell, announced that the Centers for Medicare and Medicaid Services (CMS) plans to provide Medicare coverage for the NDPP. While this proposal still must go through a public comment period, it is expected to go into force before President Obama leaves office. This is a major victory for the Society and for the broader diabetes community.

The NDPP is an evidence-based lifestyle intervention program that has been shown to reduce or delay the onset of diabetes by 71% in the Medicare population. The NDPP promotes weight loss and encourages increased physical activity and healthier eating habits for people with prediabetes via a core 16-session lifestyle intervention: one hour a week, in a group setting, directed by a lifestyle coach. Studies show that Medicare saved \$2,650 for each individual who was enrolled in a program, as individuals were able to substantially reduce their risk for future diabetes.

Over the past five years, the Endocrine Society has been a leading advocate calling for Medicare coverage of the NDPP. We met with both congressional offices and federal agencies, and we worked with other diabetes advocates to share our message. We are pleased with HHS’

decision to provide coverage and look forward to working with the agency and with coalition partners to ensure that this program has a measurable impact on the lives of people with prediabetes. It is not yet clear how Medicare will reimburse for these services, as it will be delineated in future rulemaking; the Society will provide comments to CMS on this issue and will inform its members as we move forward in ensuring that people with prediabetes have access to these programs.

The proposed expansion in Medicare coverage was made possible by provisions in the Affordable Care Act. Today, the Endocrine Society is releasing policy recommendations to improve care for people with diabetes as the government continues to implement the healthcare law.

Senate HELP Committee Considers Medical Innovations Legislation; Endocrine Society Recommendations Included

Beginning in February and continuing through April, the Senate Health, Education, Labor and Pensions (HELP) Committee has held discussions on legislation that will be combined to form the Senate's Medical Innovations bill. The Innovations bill will be the Senate's version of the House-passed 21st Century Cures (HR 6) legislation and aims to enhance research at the National Institutes of Health (NIH), improve the approval process of new drugs and devices at the Food and Drug Administration (FDA), and address concerns of the medical community on electronic health systems.

Many of the bills under consideration contain general provisions that could affect researchers or would introduce new activities at the NIH. For example, the Advancing Research for Neurological Diseases Act (S. 849), sponsored by Senators Johnny Isakson (R-GA) and Chris Murphy (D-CT) would require the Department of Health and Human Services to facilitate research on neurological diseases through the use of a new National Neurological Diseases Surveillance System, run by the Centers for Disease Control and Prevention. The Next Generation Researchers Act (S. 2014), sponsored by Senators Tammy Baldwin (D-WI) and Susan Collins (R-ME) would create a new office within the NIH Office of the Director to coordinate NIH policies for new researchers. And the Enhancing the Stature and Visibility of Medical Rehabilitation Research at the NIH Act (S. 800), sponsored by Senators Mark Kirk (R-IL), Michael Bennett (D-CO), Orrin Hatch (R-UT), Lisa Murkowski (R-AK), Isakson, and Collins, would set expectations for rehabilitation research planning at the NIH and subsequent annual reporting to Congress.

The Medical Innovations package also includes several issues for which the Society advocated. For example, the FDA and NIH Workforce Authorities Modernization Act contains language that would exempt scientific meetings attended by scientific or medical personnel from onerous travel restrictions imposed on federally funded scientists and clinicians. Additionally, the Advancing NIH Strategic Planning and Representation in Medical Research Act would direct the NIH to develop policies for basic research projects to include and analyze sex as a biological variable where appropriate. Importantly, the bill instructs the NIH to conduct outreach to solicit feedback on when it is appropriate for basic research projects to include both sexes. These are big advocacy victories for us. Over the past year, the Endocrine Society worked with Senate offices on: reducing administrative burdens for researchers, expanding utilization of Central Institutional Review Boards, increasing the reproducibility of basic research, and increasing investigation of sex-specific effects. We appreciate all of the work of Society members in sharing these issues with members of Congress, and we will continue to work with the House and Senate on passage of the legislation.

Although the House has passed the 21st Century Cures bill, the outlook for the Senate Medical Innovations legislation was unclear as this article went to press. Chairman Lamar Alexander (R-TN) and Ranking Member Patty Murray (D-WA) are still negotiating the potential inclusion of mandatory funds for the NIH as a component of the Medical Innovations package, a key priority for Senate Democrats; Alexander indicated that the Medical Innovations package would not go to the Senate for a vote until the funding issues were resolved. Even if the Senate passes the legislation, differences between the House and Senate bills would need to be worked out in a conference agreement and passed by both chambers. For the latest news on the Medical Innovations package and other legislation that could impact researchers, stay tuned to the latest issues of *Endocrine Insider* and *Endocrine News*.




National Institute of Diabetes and Digestive and Kidney Diseases Director Griffin Rodgers, MD, and American Diabetes Association CEO Kevin Hagan, are flanked by NFL players Rashad Jennings (New York Giants), Sam Acho (Chicago Bears), and Aaron Murray (Kansas City Chiefs) where they met to discuss the impact of diabetes and the importance of future research.

Society Participates in World Health Day to Raise Awareness about Diabetes Issues

April 7 marked World Health Day, a global campaign conducted each year to highlight the most pressing public health issues. This year the campaign focused on beating diabetes given the more than 400 million people worldwide who have been diagnosed with this disease, a number which is expected to more than double over the next two decades.

To raise awareness about this important issue, the Society disseminated two advocacy campaigns to our U.S. members. One campaign asked members of Congress to support Medicare coverage of continuous glucose monitors, and the other called for increased funding for the National Institutes for Health. International members were also encouraged to support the message of World Health Day by engaging in social media activities. We also participated in an event at the White House to discuss ways to improve care for patients with diabetes in the U.S.

The event featured prominent members of the diabetes community, federal agencies, and patient advocates, including members of the NFL. 

Take Action:

If you were unable to participate in the Society's advocacy campaigns on World Health Day, it's not too late. Go to endocrine.org/advocacy to urge Congress to increase NIH funding and/or to support Medicare coverage of CGM. Our advocacy software will provide a letter and direct your email to your Representative and Senators. All you need to do is provide your zip code; no Member ID is needed.

HORMONES AND YOUR BONES

WHAT YOU NEED TO KNOW

The endocrine system is a network of glands and organs that produce, store, and secrete hormones. Hormones are really important to bone health and strength. Too much or too little of certain hormones in the body can contribute to osteopenia and osteoporosis. These are conditions in which bones become weak and are more likely to fracture or break.

WHAT IS OSTEOPOROSIS?

Osteoporosis, which means porous bones, is a progressive condition in which bones become weak and more likely to fracture or break. Osteopenia is the more moderate decline in bone mass than occurs in osteoporosis.

Throughout the early part of your life, the amount of bone lost and the amount of bone gained — called bone turnover — remains balanced. Bone mass (size and thickness) increases during childhood and early adult life. After mid-life, more bone is broken down than is formed, and bone mass slowly declines.

DID YOU KNOW?

Bone loss is a natural part of aging, but there are things that you can do to help keep your bones healthy.

- In the United States, 44 million Americans are at risk for osteoporosis.
- 10 million Americans already have osteoporosis.
- Women make up 80% of osteoporosis cases.
- Each year 1.5 million people suffer a fracture from bone loss.

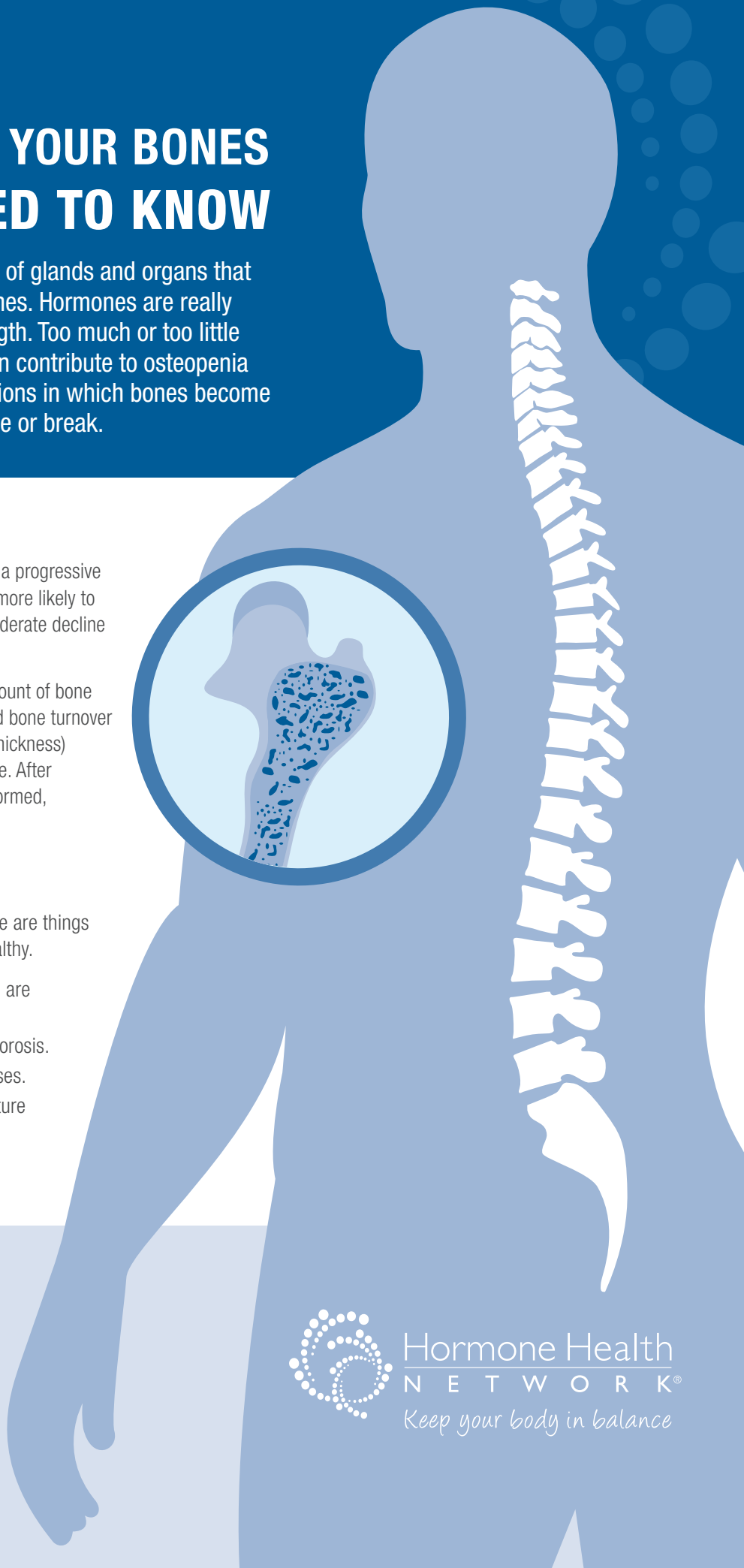
Source: Report from the Surgeon General

Visit hormone.org for more information.

Additional Editing by
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OSTEOPOROSIS AND HORMONES

- **Menopause** — during this period, the ovaries make less estrogen; therefore, estrogen-related bone protection is diminished
- **Aging in Men** — they produce less testosterone as they age, which can contribute to bone loss
- **Pituitary or Adrenal Gland Tumor** — the body is producing excess cortisol and Cushing's syndrome develops, which can damage bones
- **Corticosteroid Medications (Steroids)** — long-term use of prednisone and cortisone can affect bone health
- **Other Hormone Imbalances** — including: an over-active thyroid gland, and hyperprolactinemia, in which the pituitary gland produces too much of the hormone prolactin
- **Thyroid Cancer and Hypothyroidism** — in which treatment might include high doses of thyroid hormone
- **Eating Disorders** — these often lower sex hormone production, which can also result in bone loss and increased risk of osteoporosis



Your doctor can order a bone density test (DXA scan) to determine your risk of bone fractures. If you are over 65 and you do not have any risk factors for osteoporosis, you should still have a bone density test.

UNCONTROLLABLE RISK FACTORS

- Being over age 50
- Being female
- Menopause
- Family history
- Low body weight (small and thin)
- Being Caucasian or Asian

CONTROLLABLE RISK FACTORS

- Diet low in calcium
- Decreased sun exposure, which results in low vitamin D
- Not eating enough fruits and vegetables
- Little or no exercise
- Cigarette smoking
- Drinking too much alcohol
- Losing too much weight

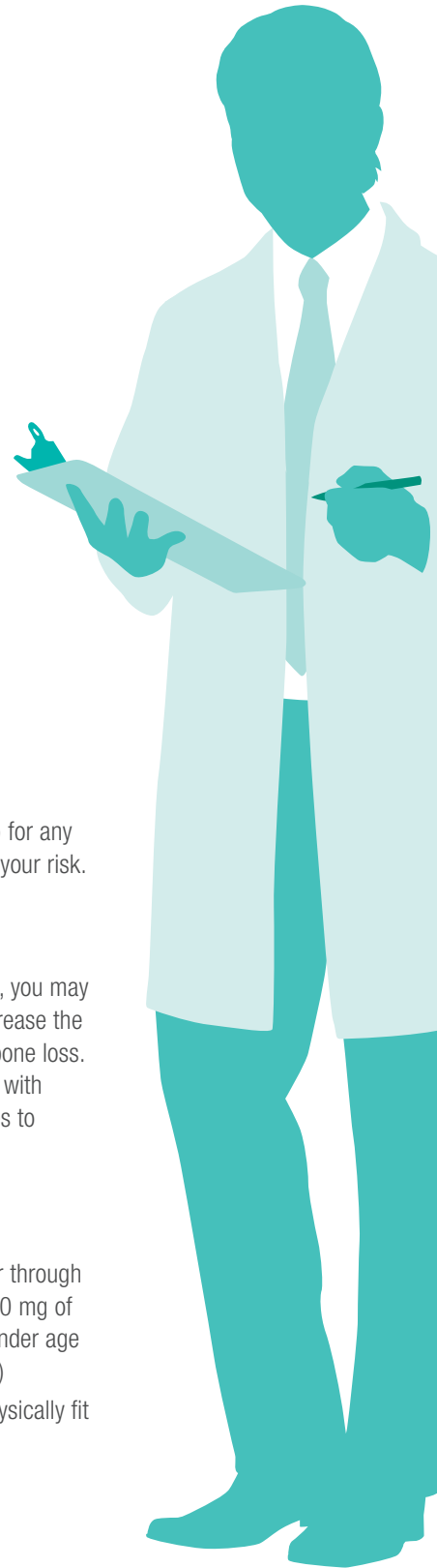
Therapy with a steroid (such as prednisone) for any significant length of time can also increase your risk.

TREATMENT

Along with prevention and lifestyle changes, you may need medication to stop bone loss and decrease the risk of fractures. Certain drugs slow down bone loss. If you are taking hormone medications, talk with your doctor to get the most appropriate doses to treat your condition.

4 STEPS TO PREVENTION

- Get enough calcium and vitamin D, either through diet or supplements (at least 1,000-1,200 mg of calcium; 400-800 IU of vitamin D daily under age 50 or at least 800-1,000 IU after age 50)
- Do weight-bearing exercises and stay physically fit
- Avoid smoking
- Don't drink too much alcohol



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

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POSITION AVAILABLE FOR ENDOCRINOLOGIST

Lehigh Valley Health Network (LVHN) in eastern Pennsylvania seeks a BC/BE endocrinologist to join a large network practice. Our new associate will join 10 other endocrinologists and fill a position being vacated by one of the practice providers who has recently announced his plans to retire in 2016. The position offers the opportunity to teach residents/medical students as well as eligibility for faculty appointment at the University of South Florida, the network's academic affiliate. The collegial group enjoys a favorable call schedule and the benefits of working for the area's largest employer.

LVHN is a community health network in eastern Pennsylvania, just 60 miles north of Philadelphia and 90 miles west of NYC. The physicians, together with 5 NPs, do consults at the 800-bed main campus and the 188-bed Muhlenberg campus, just 20 minutes apart. They also see patients in outpatient offices on these hospital campuses. The LVHN network has a dedicated endocrine testing unit and active diabetes teaching unit with a pump program supported by CDEs, NPs and RDs. For 20 consecutive years LVHN has been listed in U.S. News & World Report as one of the nation's best hospitals. Last year we were recognized for being in the top 3% of leading hospitals in diabetes and endocrinology.

The Lehigh Valley area is anchored by the city of Allentown, the fastest growing city in the state. Urban redevelopment that includes new businesses, sophisticated metropolitan-style housing, four-star restaurants and entertainment venues are credited with the city's growth. Within 10 minutes of the downtown are beautiful suburban neighborhoods, city parks, bike trails, ski areas and more. The academic opportunities in the area include excellent public schools, highly regarded private schools plus 10 colleges and universities. More than 700,000 people live, work, learn and play in the greater Lehigh Valley.

If interested in this opportunity, please email your CV to:

Pamela.Adams@LVHN.org
or call 484-862-3202.

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Contact Sandy Jones

Manager of Physician Recruitment
(937) 558-3477 office • (937) 657-2447 cell
sandy.jones@ketteringhealth.org



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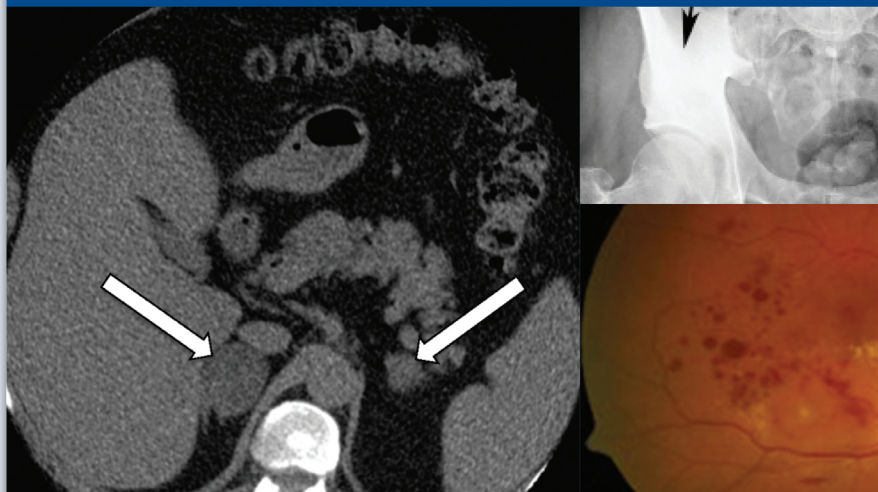
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