

MAY 2023

THE LEADING MAGAZINE FOR ENDOCRINOLOGISTS

Endocrine news

junk food

A Special ENDO2023 Symposium Examines Food's Impact on Our Health

A three-session symposium on our everchanging food environment, "**Impact of the Changes in Food Environment in the Development of Obesity,**" looks at endocrine-disrupting chemicals, climate change, and processed food and how they impact endocrine health, specifically obesity.

Plus more from

ENDO2023

The Vitamin D Debate

Experts discuss the pros and cons of using vitamin D supplements in female patients at risk for osteoporotic fractures.

Breaking Barriers in Bone Health

Racial and ethnic disparities in osteoporosis care take center stage as the pros weigh in on the vital role of endocrinologists going forward.

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Each year, the hottest tickets at **ENDO** are the various debates, and **ENDO 2023** will be no exception when experts weigh in on the pros and cons of using vitamin D supplements in female patients at risk for osteoporotic fracture. While Ghada El-Hajj Fuleihan, MD, MPH, will argue in favor, Steven R. Cummings, MD, will present the opposing view in a session that will sure to be a crowd pleaser! **BY KELLY HORVATH**

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Maria T. Balhara discusses her ENDO 2023 sessions on food's impact on human health

A three-session symposium on our everchanging food environment, "Impact of the Changes in Food Environment in the Development of Obesity," looks at endocrine-disrupting chemicals, climate change, and processing methods and how these factors impact endocrine health, specifically obesity. *Endocrine News* talks to one of the moderators of these sessions, Maria T. Balhara, a South Florida high school senior, whose research concentrates on how chronic health conditions are affected by what we eat and how we live. **BY DEREK BAGLEY**

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With the recent reexamination of how to consider race/ethnicity in medical treatment, many practitioners may feel confused about implementing such procedures. The **ENDO 2023** symposium "Addressing Racial and Ethnic Disparities in Osteoporosis Care" will provide attendees with an understanding of the impact of incorporating race/ethnicity in osteoporosis care and provide suggestions for treating their own patients. **BY ERIC SEABORG**

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Endocrine Society advocates for NIH funding, diabetes prevention during Diabetes Hill Day; Endocrine Society hosts special event for medical students and residents at **ENDO 2023**.

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Hormone Science to Health



Celebrating Basic Research's Importance to Our Field

“
Basic research provides the foundation for our understanding of the endocrine system and for subsequent advances in public health. Helping scientists realize the translational potential of their research is a crucial part of the Society's mission.
”

Gathering as an endocrine community provides valuable opportunities to connect and share our perspectives — whether our work focuses on foundational research, clinical science, patient care, or some combination. I know my research has benefited immensely from exposure to diverse expertise and viewpoints in our field.

Basic research provides the foundation for our understanding of the endocrine system and for subsequent advances in public health. Helping scientists realize the translational potential of their research is a crucial part of the Society's mission.

We can't wait to bring together our basic researchers in Chicago during **ENDO 2023** to share new and exciting discoveries that expand the frontiers of endocrinology. In support of this, our annual meeting will feature four Basic Science Pathways to simplify the schedule planning process. These dedicated “meeting-within-a-meeting” tracks will create a more focused meeting environment to explore the latest science in diabetes and metabolism, neuroendocrinology, nuclear receptors and signaling, and reproductive endocrinology.

Through focused discussions, poster sessions, and networking opportunities, our Basic Science Pathways help attendees engage with the people and ideas that can take their research in promising new directions. I hope you will register to join us for this year's meeting.

At **ENDO 2023**, we will also be showcasing the beauty of discovery-oriented research. I am excited to see the winners of our second Endocrine Images Art Competition on display in Chicago. The contest celebrates the aesthetic appeal of endocrine microscopy and life science images. This year, we received more than two dozen submissions from all over the world. The 2022 winners are on display in the Sawin Library of the Endocrine Society's Washington, D.C., offices, and I look forward to seeing this year's winners on the office walls after **ENDO 2023** concludes.

Furthermore, we recognize that the growth of large and complex data sets in all fields are presenting researchers with new opportunities and challenges.


New data management tools allow researchers to identify trends in data before embarking on new studies. As “big data” becomes an increasingly important part of our field, we need new tools and technologies to manage and share data. It is also crucial to ensure that the way we handle data complies with new policies implemented by research funders to enhance data management and accessibility.

Our partners at the Federation of American Societies for Experimental Biology (FASEB) are now offering a program called DataWorks! to help scientists effectively share and manage data. The program includes a help desk where you can obtain guidance on data sharing and reuse policies and practices. The DataWorks! Salons offer a conversation space for the biomedical research community to exchange ideas about data sharing and reuse. The program also includes the DataWorks! Prize to recognize the achievements of biological and biomedical research teams in this space.

It is important to note that basic and translational research cannot be successful without adequate financial support. With Congress weighing the Fiscal Year (FY) 2024 budget priorities, the Society is at the forefront calling for biomedical research funding.

Amid pressure to slash program budgets, our goal is to ensure the National Institutes of Health (NIH) has the funding needed to support basic research. We are urging Congress to allocate at least \$50.92 billion for the NIH base budget, which would account for biomedical inflation and provide a needed 5% increase in real growth over the FY 2023 budget.

I hope our researcher attendees will join us for a special session at **ENDO 2023** called “How to Advocate for Your Science” on June 15 at 10 AM, so that you can learn more

about the Society’s advocacy to increase federal support for research and how you can participate. Together, we can ensure that basic science in the endocrine field has a bright future. 

– Ursula B. Kaiser, MD
President, Endocrine Society



Got 5 minutes?

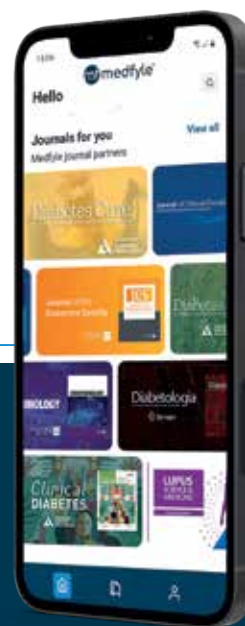
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MAY 2023

Endocrine news

THE LEADING MAGAZINE FOR ENDOCRINOLOGISTS

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

A Sneak Peek at ENDO 2023

With ENDO 2023 just around the corner next month in Chicago, we've devoted a sizable amount of print real estate to highlighting sessions that are sure to whet your appetite for the Endocrine Society's first all in-person annual conference since 2019.

Some of the most anticipated sessions each year at ENDO are the Endocrine Debates. And this year will certainly be no different.

Among the debates at ENDO 2023 discussions of brown fat's metabolic benefits; pre-consensual clitorophalloplasty in DSD patients; screening hypertension patients for primary aldosteronism; and vitamin D for female patients at risk for osteoporotic fractures.

On page 20, Kelly Horvath tackles the last debate in "The Devil is in the [Vitamin] D-etails." While Ghada El-Hajj Fuleihan, MD, MPH, will argue in favor of vitamin D supplementation, Steven R. Cummings, MD, will present the opposing view in a session that will sure to be a crowd pleaser. Moderating this debate will be Dolores M. Shoback, MD, who says she expects a "lively debate from a clinician/clinical investigator interested in skeletal health (El-Hajj Fuleihan) and on the other hand, an epidemiologist who's also very interested in clinical trials and bone health and the health of people as they age (Cummings)," she says. "I'm thrilled to have two experts of credibly high caliber taking on this issue for the clinical and research endocrine audience. We're very fortunate to have them."

I can't be the only one who's noticed a definite change in the food I consume as an adult and how different it seems from what I ate as a youngster. Well, it's not just me; the food environment *has* been changing in many ways over the past few decades, and they will be addressed in a special, three-session ENDO 2023 symposium entitled "Impact of the Changes in Food Environment in the Development of Obesity." One of the moderators of these sessions is Maria T. Balhara, a South Florida high school senior whose research looks at how chronic health conditions are impacted by not only how we live but, more importantly, what we eat.

On page 14, senior editor Derek Bagley sits down with Balhara and discusses these sessions in "Junk Food," where she elaborates on her own



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research and why she became interested in it at such a young age. She says that many endocrine dysfunctions are influenced by modifiable lifestyle factors such as long-term diet, exercise, and stress management, which are themselves shaped by socio-economic elements. “By understanding the underlying socio-economic elements that influence these modifiable factors, we can develop targeted preventative interventions to decrease the burden of chronic illnesses,” Balhara says.

In “**Breaking Barriers in Bone Health**” on page 26, Eric Seaborg covers another **ENDO 2023** multi-session symposium, “Addressing Racial and Ethnic Disparities in Osteoporosis Care.” These sessions will take a deep dive into how to consider race/ethnicity within the osteoporosis field. Since many practitioners may feel confused about how to adapt their clinical reasoning regarding these controversies, this symposium will provide an understanding of the impact

of incorporating race/ethnicity in osteoporosis care as well as suggestions for a way forward. “We need to raise public awareness about osteoporosis as an important public health burden,” says session moderator Joy Y. Wu, MD, PhD, chief of the Division of Endocrinology at Stanford University School of Medicine. “It is something that can be screened for and managed. An important message is that fractures are not necessarily inevitable with aging because screening and prevention could reduce the number of fractures.”

And be sure to check out the June *Endocrine News* with even more highlights of what you can expect from **ENDO 2023!** Hope to see you in Chicago! 

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

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BY DEREK BAGLEY
Senior Editor

TRENDS & INSIGHTS

Weight Loss with Combination Anti-Obesity Medications Similar to Bariatric Surgery Outcomes



Weight loss achieved using a combination of anti-obesity medications (AOMs) can approach the reduction seen in bariatric surgery, according to a paper recently published in *JCEM Case Reports*.

Researchers led by Priya N. Patel, MD, of the Center for Pediatric Obesity Medicine at the University of Minnesota Medical School in Minneapolis point out that obesity is a multifactorial chronic disease and treatment remains challenging. Lifestyle modification therapy remains the first line of treatment, but patients often fail to keep the weight off. “Therefore, adjunct therapy is often needed.

While metabolic/bariatric surgery (MBS) provides on average the most effective and durable BMI reduction with a mean weight loss of $\geq 30\%$ and significant reductions in obesity-related comorbidities, such procedures are

invasive, carry risk, and may not be attractive or available to many individuals,” the authors write.

The authors go on to write that AOMs are promising adjuncts to lifestyle modification therapy and that if a patient does not respond to lifestyle modification and a single AOM, then combination AOMs should be considered. Here, they detail the case of a 23-year-old male initially presenting with a body mass index of 84.3 kg/m². In addition to lifestyle modification therapy, he was started on phentermine, topiramate, and metformin, which only resulted in weight stabilization after one year. “Subsequently, semaglutide ... was added, along with a lower calorie diet, which resulted in a 32.5% total body weight reduction, approximating that which can be achieved following metabolic/bariatric surgery,” the authors write.

The authors hypothesize that this significant weight loss was the result of a combination of medications targeting multiple eating behavior pathways simultaneously, including appetite, satiety, food craving, and binge-eating tendencies. “Indeed, as body weight is regulated by a complex physiological network, combination AOM regimens may achieve weight loss by targeting multiple pathways simultaneously. It is likely that most patients will require AOM use long term; however, studies showing the impact of discontinuation are currently lacking,” the authors conclude.

“
As body weight is regulated by a complex physiological network, combination AOM regimens may achieve weight loss by targeting multiple pathways simultaneously.
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Autism Gene Linked to Infertility, Researchers Find

Mutations of the Fragile X messenger ribonucleoprotein 1 gene (*Fmr1*) — a leading genetic cause of intellectual impairment and autism — contribute to premature ovarian failure (POF) due to changes in neurons that regulate reproduction in the brain and ovaries, according to a study recently published in *Frontiers in Endocrinology*.

Researchers led by Djurdjica Coss, PhD, a professor of biomedical sciences at the University of California, Riverside School of Medicine, point out that *Fmr1* gene mutations are also associated with reproductive disorders, such as early menopause in females and macroorchidism in males, and while the effect of *Fmr1* mutations on the cortex and hippocampus have been analyzed, how mutations affect hypothalamic functions have not been examined. “Given that *Fmr1* gene mutations are also associated with reproductive disorders, combined with increasing infertility rates, it is critical to examine *Fmr1*’s role in the reproductive axis,” the authors write.

For this study, researchers led by Coss used transgenic mice that lack the *Fmr1* gene to emulate the condition in people with a mutation in this gene. They first determined that this mouse model mimics what is observed in women with a *Fmr1* mutation and then compared the reproduction-regulating neurons in the ovaries and the brain between these mice and their normal counterparts. Coss and her team found the changes in function of these neurons led to a more rapid secretion of hormones in young transgenic female mice that later stopped reproducing early.

The researchers then removed the ovaries from these mice to determine the effect of the *Fmr1*



mutation on just the neurons in the brain, finding that gonadotropin-releasing hormone (GnRH) neurons showed changes in connectivity that affect how they function, with an increased number of synapses that cause them to be faster and have more pulses of hormone secretion. The team also determined that neurons supplying the ovaries with nerves were more abundant in the transgenic mice than in their normal counterparts.

“These results reveal *Fmr1* function in the regulation of GnRH neuron secretion, and point to the role of GnRH neurons, in addition to the ovarian innervation, in the etiology of *Fmr1*-mediated reproductive disorders,” the authors conclude.



“

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Obesity Risk May Pass from Mothers to Daughters

Women with obesity may share risk for the disease with their daughters, but not their sons, according to a new study published in *The Journal of Clinical Endocrinology & Metabolism*.

Researchers led by Rebecca J. Moon, BM, PhD, MRCPCH, of the MRC Lifecourse Epidemiology Centre, University of Southampton in Southampton, U.K., point out that strong relationships between maternal and offspring BMI have been reported, but there are fewer data reporting relationships between paternal body composition and that of their offspring. And while BMI is an important outcome due to its association with long-term morbidity and mortality, the authors write that it provides no information on the relative proportion of fat mass and lean mass, which can vary considerably for a given value. “Furthermore, most studies have assessed the relationships at a single cross-sectional time point, which does not account for the changing body composition over early childhood and adolescence due to the adiposity rebound and pubertal development,” the authors write.

The researchers measured body fat and muscle in 240 children (nine years old or younger) and their parents in early childhood, inviting each child for body composition assessment at three ages in early childhood: age four years (before the adiposity rebound for most children), at age six to seven years (around or just after the adiposity rebound), and eight to nine years (before or at the onset of puberty).

“Thus, we were able to explore cross-sectionally the relationships between parent (assessed only at offspring age eight to nine years) and offspring body composition at each time point and observe how these might differ at each stage of early childhood,” the authors write.

They found that the girls had similar BMI and fat mass to their mothers, suggesting that girls born to mothers who have obesity or have high fat mass are at high risk of also developing obesity or being overweight. The researchers did not find the same association between boys and their mothers or either girls or boys and their fathers.

“In conclusion,” the authors write, “in this prospective birth cohort study, relationships were observed between mother and daughter body composition, but not with mother-son or father-offspring comparisons. Although the mechanisms are uncertain and require further exploration, these findings highlight that girls born to mothers with excess adiposity may be at higher risk of excess adiposity themselves, and approaches to addressing this at an early age should be considered.” **EN**

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Endocrine Society Experts Applaud Proposed EU Limits on BPA in Food

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As researchers
studying the impact
of BPA and other
chemicals on the
body’s hormones, we
are encouraged to
see EFSA recognize
the need for
aggressive action to
limit our exposure
and protect public
health.”

”



The Endocrine Society praised the European Food Safety Agency’s (EFSA’s) decision to establish a strict limit on the amount of bisphenol A (BPA) that can be safely consumed daily.

BPA — a chemical that mimics the effects of estrogen on the body — seeps into food and drinks through plastics and other packaging. BPA has been linked to infertility, obesity, heart disease, type 2 diabetes, cancer, and neurodevelopmental issues such as attention deficit/hyperactivity disorder.

Because of widespread use of BPA in consumer products and other goods, people of all ages consume at least 150 times more than the new tolerable daily intake (TDI) of 0.2 ng of BPA per kilogram of body weight, on average, according to the EFSA. Infants between the ages of six and 12 months and toddlers between the ages of one and three years old consume, on average, more than 4,200 times the tolerable daily intake.

“The revised tolerable daily intake reflects a large foundation of scientific information demonstrating that even exposure to extremely low levels of BPA can cause a variety of harmful effects, including on endocrine systems,” says Endocrine Society spokesperson Anne Simone Parent, MD, PhD, of the University of Liège in Liège, Belgium. “As researchers studying the impact of BPA and other chemicals on the body’s hormones, we are encouraged to see EFSA recognize the need for aggressive action to limit our exposure and protect public health.”

Diet is the primary source of BPA exposure for most people. People also can be exposed to BPA through other sources. Air, dust, and water are potential sources of exposure.

While in a previous draft opinion the EFSA proposed a slightly lower tolerable daily intake of 0.04 ng of BPA per kilogram of body weight, the final TDI sends a strong message to regulators that urgent action is needed to protect the public from exposure.

Endocrine Society Endorses Bipartisan Bill to Address Insulin Affordability

INSULIN Act of 2023 would limit private insurance copays and encourage competition.

On April 21, the Endocrine Society endorsed the Improving Needed Safeguards for Users of Lifesaving Insulin Now (INSULIN) Act of 2023, a bipartisan insulin affordability bill.

Introduced by Sens. Jeanne Shaheen (D-NH) and Susan Collins (R-ME), this legislation would cap out-of-pocket insulin costs for those with private insurance, ensure patients can share in insulin rebates and discounts, and promote competition in the insulin market.

These measures would protect access to life-saving insulin for more than 7 million people nationwide who rely on the medication to manage their diabetes. According to the U.S. Centers for Disease Control and Prevention, 37.3 million people nationwide — about 11% of Americans — have diabetes.

“People with type 1 diabetes depend on insulin to stay alive since their bodies cannot produce this hormone. Privately insured individuals with diabetes cannot wait any longer for Congress to take action to address their insulin costs,” says Joshua J. Joseph, MD, MPH, Endocrine Society Clinical Affairs Core Committee Chair. “We are pleased to endorse this comprehensive legislation, which will make insulin more affordable for those who rely on it.”

Building upon a bill that was released last year, the INSULIN Act addresses the underlying problems in the insulin market that contribute to escalating prices. The INSULIN Act aligns with recommendations in the Society’s Insulin Access and Affordability Position Statement, which calls for lowering the price of insulin through rebate reform and limiting copayments to no more than \$35 per month for insulin. The bill includes several policies to improve insulin access and affordability, including:

- ▶ Ensuring group and individual health plans waive any deductible and limit cost sharing to no more than \$35 per month or 25% of list price, for at least one insulin of each type and dosage form.

- ▶ Mandating pharmacy benefit managers pass through 100% of insulin rebates and other discounts to insurance plan sponsors so that patients can share in any savings.

- ▶ Promoting competition from generic and biosimilar drugs.

To encourage competition in the insulin market, the bill calls for measures to ease the approval process for generic and biosimilar drugs, easing formulary access for biosimilar drugs in Medicare Part D, and requiring a report to Congress on issues and market dynamics.

Although the discovery of insulin occurred over a century ago, the price of insulin nearly tripled between 2002 and 2013, and the trend upward has continued over the past decade. In 2021 alone, nearly one in five American adults with diabetes — about 1.3 million people — rationed their insulin to save money, according to a study.

Progress is being made to improve insulin access. The Inflation Reduction Act, which was signed into law last year, included a provision to cap insulin prices for individuals insured by Medicare. Three major insulin manufacturers have recently announced plans to lower prices on insulin products. ^{EN}



ENDO 2023

June 15 – 18, 2023 • Chicago, Illinois

We hope to see you at **ENDO 2023**, taking place June 15 – 18, 2023, in Chicago, Ill. With more than 7,000 attendees, nearly 2,000 abstracts, and more than 200 other sessions, **ENDO** is the top global meeting on endocrinology research and clinical care. **ENDO** provides the opportunity to collaborate with an unparalleled list of endocrinologists, healthcare practitioners, and leading scientists from around the world. Through sharing our experience, advice on patient care, and new advances in research, we move the needle forward in hormone health and science. Our outstanding slate of world-renowned speakers will showcase the most cutting-edge advances in research and medicine, with presentations spanning the spectrum of science, clinical care, and social implications.

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18th International Pituitary Congress

**Chicago, Illinois
June 12 – 14, 2023**

The 18th International Pituitary Congress will present an exciting group of speakers expert in normal and disordered pituitary function. Our faculty includes distinguished clinicians and investigators, fellows in training, and basic scientists. As usual, we will present cutting-edge in-depth topics that will permit our attendees to become familiar with the latest trends in pituitary endocrinology.

The plenary format of the meeting is intended to facilitate maximum interaction and free exchange of ideas among participants and speakers. <https://www.pituitarysociety.org/events>

ADA 83rd Scientific Sessions San Diego, California/Hybrid June 23 – 26, 2023

The Scientific Sessions offers researchers and healthcare professionals the unique opportunity to share ideas and learn about the significant advances and breakthroughs

in diabetes. Participants will receive exclusive access to more than 190 sessions and 2,000 original research presentations, take part in provocative and engaging exchanges with leading diabetes experts, expand their professional networks, and so much more.

<https://professional.diabetes.org/scientific-sessions>

ADCES23 Houston, Texas August 4 – 7, 2023

The Association of Diabetes Care &



Endocrine Society Webinars

The Endocrine Society holds webinars throughout the year on many topics, from clinical practice and basic research to career development, advocacy, and more. Check below for information on upcoming webinars and links to previous events. Visit our Center for Learning for a full list of Society educational offerings.

Past webinars have included The Complexities of Cushing's Syndrome: Diagnosing and Managing Patients; Utilizing Nurse Practitioners and Physician Assistants to Optimize Patient Care: How to Build Effective Teams; Genetics in Pituitary Disease; Facts and Controversies of Testosterone Replacement Therapy in Male Hypogonadism; and so much more! Most of the webinars are free for Endocrine Society members, but some do require a small registration fee.

<https://education.endocrine.org/Public/Catalog/Main.aspx>

Education Specialists (ADCES) Annual Conference is the premier diabetes care and educational event of the year. More than 3,000 diabetes care and education specialists and other healthcare professionals are expected to participate at ADCES23 in Houston, Texas. Connect, collaborate, and educate yourself and others on the latest in diabetes care and education.

<https://www.diabeteseducator.org/home>

2023 American Thyroid Association Annual Meeting

Washington, D.C.

September 27 – October 1, 2023

The ATA Annual Meeting is the world's preeminent event for those interested in thyroid diseases and disorders and provides an opportunity for peer-to-peer learning and collaboration through lectures, interactive discussions, meet the professor sessions, and abstracts. This year, the ATA will celebrate its centennial anniversary with a culmination of the celebration and the largest gathering of thyroidologists in the world. Whether you're an endocrinologist, a surgeon, an advanced practice provider, a fellow in training, or a medical student, the topics covered during the meeting will provide in-depth information about thyroid diseases and disorders. With a diverse program planned, attendees can customize their experience by attending sessions that are most important to their professional development.

<https://www.thyroid.org/2023-annual-meeting/>

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Dallas, Texas

October 14 – 17, 2023

The preeminent international conference for obesity researchers and clinicians, ObesityWeek® is home to the latest developments in evidence-based obesity science: cutting-edge basic and clinical research, state-of-the-art obesity treatment and prevention, and the latest efforts in advocacy and public policy. Overcoming obesity requires multi-disciplinary approaches. This is the conference that encompasses the full spectrum of obesity science from basic science research, to translational research and clinical application, to public policy; diet, exercise, lifestyle, and psychology to medical and surgical interventions; from pediatric to geriatric to underserved populations.

<https://obesityweek.org/>

INTERNATIONAL ITINERARY

5th World Congress on Diabetes and Endocrinology

Paris, France

July 12 – 13, 2023

The Fifth World Congress on Diabetes and Endocrinology will be organized around the theme of “novel therapeutic approaches for prevention of diabetes and exploring the diabetic complications.” Diabetes Congress 2023 will be an amalgamation of academia and industry as it involves every aspect of empirical and conceptual thinking in exploring new dimensions in this field, and is open to all types of research methodologies both from academia and industry.

<https://diabetes.inovineconferences.com/>

The 61st Annual ESPE Meeting 2023

The Hague, The Netherlands

September 21 – 23, 2023

The theme for the European Society for Paediatric Endocrinology's (ESPE) 61st Meeting is “Global Challenges in Pediatric Endocrinology,” which will address several important challenges from around the world: carbon dioxide-driven climate change; global but also local inequality with large differences in access to basic needs and medical care; and a recent pandemic. Climate change calls for more sustainable medical care in the field of pediatric endocrinology and also raises ethical questions. Another big challenge is the ever-rising prevalence of obesity, with low- and middle-income countries quickly catching up with high-income countries. Although considerable advances are made with respect to medical treatment, these are not automatically available for large groups of affected individuals. Both experienced colleagues and younger trainees will have the opportunity to present their work in oral sessions with ample opportunities for further presentations and discussion in the poster sessions, which will include both physical and electronic posters. The meeting will be held in World Forum, an iconic international event venue located between the beach and the city center in the “City of Peace and Justice.”

<https://www.eurospe.org/events-espe/espe-2023-annual-meeting/>

EndoBridge 2023

Antalya, Turkey

October 19 – 22, 2023

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

www.endobridge.org

A top-down view of a variety of junk food items arranged on a white surface. In the top left, there are several golden-brown onion rings. To their right is a small white bowl of red ketchup. In the top right corner, a red and white checkered paper cone is filled with golden french fries. The center features a wooden cutting board with three burgers: one whole, one cut in half, and one bun. To the left of the burgers is a wooden board with several pieces of breaded, fried fish. Below the fish is a small metal cup of white dipping sauce. In the bottom left, an open cardboard pizza box is filled with several slices of pizza topped with pepperoni, mushrooms, and melted cheese. To the right of the pizza is another small metal cup, this one containing a dark brown dipping sauce. In the bottom right, a large pile of fried chicken pieces, including drumsticks and wings, sits on a brown paper tray.

END 2023

Junk food

BY DEREK BAGLEY

A three-session symposium at **ENDO 2023**, “Impact of the Changes in Food Environment in the Development of Obesity,” looks at endocrine-disrupting chemicals, climate change, and processing methods and how these factors impact endocrine health, specifically obesity. *Endocrine News* talks to one of the moderators of these sessions, Maria T. Balhara, a high school senior, whose research concentrates on how chronic health conditions are affected by what we eat and how we live.

Maria T. Balhara discusses her **ENDO 2023** sessions on food’s impact on human health.

Food has changed in recent years. Whether it’s climate change altering the nutrients in crops, the ever-growing availability and consumption of ultra-processed foods like sodas and potato chips, or even the presence of endocrine-disrupting chemicals (EDCs) in fast food, what we eat now is vastly different from the food on the dinner tables of previous generations.

A special symposium at **ENDO 2023** in Chicago, titled, “Impact of the Changes in Food Environment in the Development of Obesity,” will focus on how these changes are contributing to the obesity epidemic and aims to raise awareness of the impact of food changes on weight — specifically, how the current food environment is an obesogenic factor.

One of the moderators of the session is Maria T. Balhara, a high school senior from South Florida with a strong interest in understanding diet and health disparities, whose research focuses on the intersections of processed food consumption, socio-economic factors, and the increased risk of chronic health conditions. (Balhara’s study, which found that teenagers consumed less ultra-processed food during the COVID-19 pandemic, reversing a 30-year trend, was presented at **ENDO 2022** in Atlanta, Georgia.)

Balhara, who became a member of the Endocrine Society because of its emphasis on mentorship and education, as well as its promotion of diversity, equity, and inclusion, worked closely with Barbara Gisella Carranza Leon, MD, a clinical practitioner at Vanderbilt University Medical Center in Nashville, Tenn., to develop the proposal for this symposium.

Carranza Leon says that Balhara’s initial idea of nutrition and its impact on obesity caught the attention of the Society’s Annual Meeting Steering Committee, and as they worked to develop the symposium’s curriculum, they incorporated how climate change affects food into Balhara’s original idea. “It has been my pleasure to work with her,” Carranza Leon says. “I am impressed by her enthusiasm and hard work. I believe this is the first time a high school student has submitted a symposium suggestion that was accepted to be presented at our national meeting. I





Maria T. Balhara

“The main takeaway I hope attendees gain from this symposium is a comprehensive understanding of the complex interplay between the changing food environment, endocrine health, and the development of obesity. **By recognizing the multifaceted factors that contribute to obesity, such as climate change, food processing, and endocrine disruptors, we can develop targeted and effective strategies to tackle this public health challenge of obesity and improve endocrine health outcomes.**”

am sure she will have a very successful career no matter what she plans to do in the future.”

Endocrine News caught up with Balhara to talk about what to expect from this special symposium, her interest in nutrition, how food and culture are intertwined, and those plans for the future.

Endocrine News: What led to your interest in endocrinology?

Maria T. Balhara: My interest in endocrinology and cardiology emerged as an extension of my passion for understanding diet and health disparities. Many endocrine dysfunctions are influenced by modifiable lifestyle factors such as long-term diet, exercise, and stress management, which are themselves shaped by socio-economic elements. By understanding the underlying socio-economic elements that influence these modifiable factors, we can develop targeted preventative interventions to decrease the burden of chronic illnesses.

EN: What can you share about the session you're moderating?

MTB: I'm excited to share an overview of the symposium, focusing on endocrine health and modifiable environmental risk factors:

Presentation 1: “Climate Change and Food Nutrients”: This talk will explore the impact of climate change on food nutrients, specifically how factors such as rising CO₂ levels, temperature fluctuations, and changes in precipitation patterns are affecting nutrient concentrations and bioavailability. We will discuss the potential implications of these changes on human health, concentrating on micronutrient deficiencies and their effects on endocrine function and overall well-being.

Presentation 2: “Processing Matters: How Food Processing Impacts Obesity”: In this talk, we will examine the role food processing plays in obesity development, investigating the mechanistic connections between processed food consumption and disruptions in endocrine function, such as alterations in appetite-regulating hormones and insulin resistance. Additionally, we will explore the broader socio-economic factors that contribute to the widespread availability and consumption of processed foods, emphasizing the role of food environments such as food deserts in health disparities.

Presentation 3: “Endocrine Disruptors in Fast Food”: This talk will analyze the presence of EDCs in fast food, focusing on the



role these compounds play in disrupting hormonal signaling and metabolic function. We will discuss common EDCs found in fast food items, such as phthalates and bisphenol A, and their potential impact on endocrine health. Moreover, we will explore strategies to minimize exposure to EDCs and improve endocrine health outcomes.

EN: What are some examples of how food has changed in the past few years, and what are the implications for people?

MTB: One of the most notable changes in food systems is the rapid increase in ultra-processed food consumption. It has been linked to a higher risk of developing obesity, type 2 diabetes, cardiovascular disease, and certain types of cancer. Additionally, these foods can displace healthier, nutrient-dense options in the diet, exacerbating micronutrient deficiencies and increasing the risk of malnutrition. People located in food deserts, which have limited access to affordable and nutritious food, are at particular risk for these conditions.

Further, climate change has been shown to affect the nutrient composition of staple crops. The decline in nutrient content of these crops can have serious consequences for global health, particularly for populations that rely heavily on these crops as their primary sources of micronutrients. The resulting nutrient deficiencies can impair endocrine function and overall health, as well as exacerbate existing health disparities.

The increasing use of chemicals in food production, packaging, and processing has led to the presence of EDCs in various food items. These chemicals can interfere with hormonal signaling and metabolism, leading to adverse health outcomes. Fast food, in particular, has been shown to contain high levels of EDCs such as phthalates and bisphenol A. Exposure to EDCs through food consumption has been associated with a range of health issues, including obesity, type 2 diabetes, reproductive disorders, and developmental problems. Reducing EDC exposure will be an investment in human health, particularly in vulnerable populations such as pregnant women, infants, and children.

EN: With all these factors that contribute to obesity, this symposium seems like a good way to change the thinking that obesity is a “cosmetic disease” or just a lack of willpower.

MTB: Emphasizing that the obesity epidemic is not a cosmetic issue or a matter of willpower, the symposium points to three key environmental factors that are undermining the quality of our food supply: ultra-processed foods impacting appetite regulation and insulin resistance, hormone-disrupting EDCs in fast foods, and climate change reducing food nutrients. Recognizing the vital role of these environmental factors affecting food supply allows endocrinologists to take actionable steps, such as educating patients, keeping abreast of the latest research, increasing awareness, and promoting policy changes that improve the food supply at its source to enhance overall health. Thus, the symposium urgently calls for addressing obesity by tackling its primary origin — the diminishing quality of our food supply.

EN: Can you speak more about what can be done to address these changes in food?

MTB: A transition to sustainable food systems to reduce obesity urgently requires both supply and demand side interventions. Supply side interventions can increase access to healthier foods, and demand side interventions can encourage healthier food choices among consumers.

The supply interventions include nutrient-sustainable food production practices in face of climate change; strengthening regulations and guidelines for the use of chemicals in food production, packaging, and processing to minimize EDC exposure; and incentives to encourage the development of grocery stores in underserved areas.

The demand interventions can include front-of-package labeling systems that enable consumers to make informed choices, advocating for guidelines in the advertising of unhealthy foods to children, and integrating nutrition education into high-school curriculum.

Special Symposium — Impact of the Changes in Environment in the Development of Obesity

June 15, 2023 10:00 AM – 11:30 PM

In recent years, food has changed dramatically. During this symposium, we will discuss the impact of climate change on food nutrients as well as review the role of food processing in the development of obesity, and we will learn about the presence of endocrine disruptors in fast food.


Chairs: Jaime Almandoz, MD, MBA, FTOS, and Maria T. Balhara

- ▶ Endocrine Disruptors in Fast Food, **Melissa M. Melough, PhD, RD**
- ▶ Processing Matters: How Ultra-Processed Foods Impacts Obesity and Chronic Diseases, **Jean-Claude Moubarac, PhD**
- ▶ Climate Change and Food Nutrients [Speaker TBA]

EN: What's the main thing you hope attendees take away from this symposium?

MTB: The main takeaway I hope attendees gain from this symposium is a comprehensive understanding of the complex interplay among the changing food environment, endocrine health, and the development of obesity. By recognizing the multifaceted factors that contribute to obesity, such as climate change, food processing, and endocrine disruptors, we can develop targeted and effective strategies to tackle this public health challenge of obesity and improve endocrine health outcomes.

EN: What's next for you?

MTB: I will pursue my undergraduate degree at Vanderbilt University. Alongside coursework and research, I plan to work on initiatives that address health disparities. 

In the long term, innovation and research investments are needed in both supply and demand factors in the food supply chain to address these changes in food and the development of obesity to reduce the burden of chronic disease.

EN: I read that your interest in nutrition stems from how culture and food are so much a part of each other.

MTB: The relationship between culture and food is complex and multifaceted. Food is a powerful expression of cultural identity, reflecting the history, values, and traditions of a particular community or region. Food often acts as a social connector, bringing people together. Further, many faiths have specific dietary guidelines. Cultural food practices can have both positive and negative impacts on health. Traditional diets, such as the Mediterranean diet, are often rich in nutrient-dense foods like fruits, vegetables, whole grains, and healthy fats, contributing to a lower risk of chronic diseases. Conversely, other cultural food practices, such as limited consumption of vegetables and protein and increased consumption of high-fat foods in traditional diets, can contribute to the development of obesity and related health issues.

EN: On that note, it seems like there could be cultural barriers to changing some people's diets. Is that fair to say?

MTB: Cultural barriers can pose challenges to changing people's diets. Food and culture are deeply intertwined, and people often have strong emotional attachments to their culinary traditions. Consequently, dietary changes can be sometimes met with resistance, as they can be perceived as an attack on cultural identity and values.



– BAGLEY IS THE SENIOR EDITOR OF *ENDOCRINE NEWS* AND WRITES THE MONTHLY “TRENDS AND INSIGHTS” COLUMN THAT COVERS THE LATEST BREAKTHROUGHS IN ENDOCRINE RESEARCH. IF YOU HAVE A STUDY THAT YOU THINK WOULD BE OF INTEREST, CONTACT HIM AT: DBAGLEY@ENDOCRINE.ORG.

A microscopic view of several cells in a petri dish, with a blue background and a white border. The cells are orange and yellow, with some showing internal structures. The petri dish is white and curved.

CEU

CLINICAL ENDOCRINOLOGY UPDATE

2023

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CLINICAL ENDOCRINOLOGY UPDATE

SEPTEMBER 21-23, 2023 ONLINE EVENT

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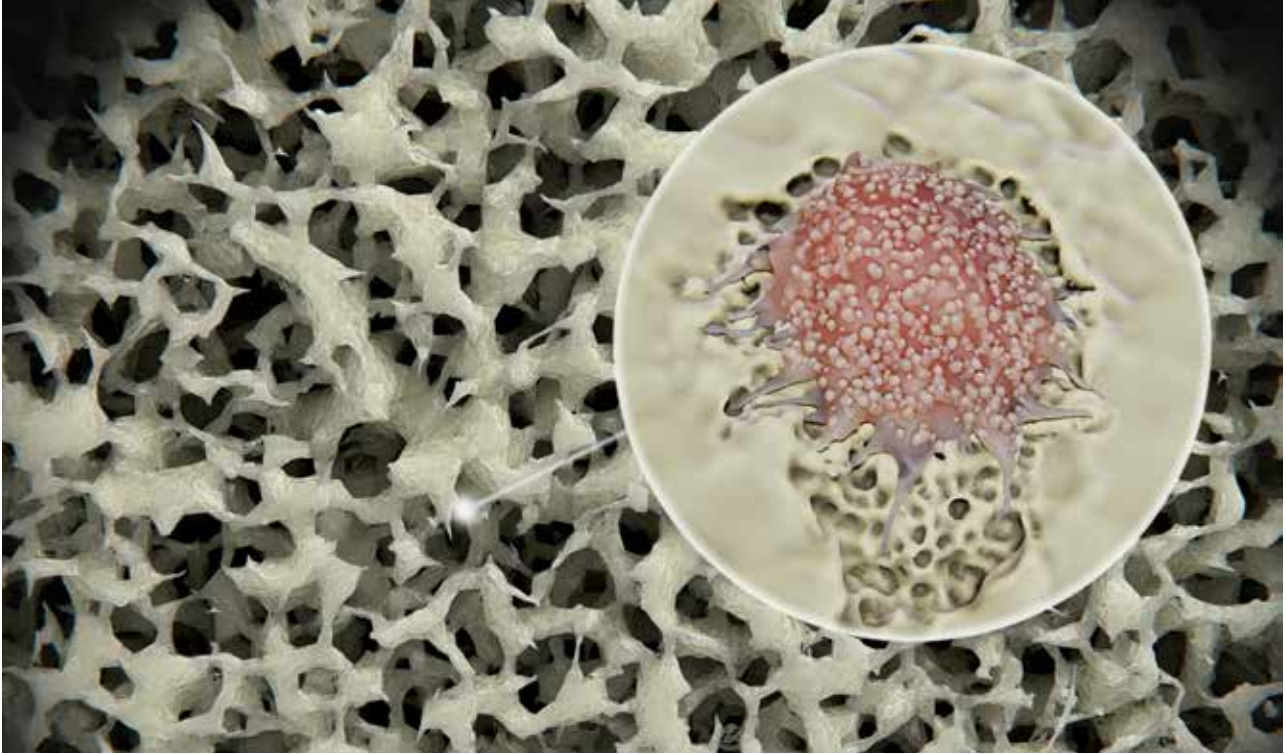
The
DEVIL

is in

the
[Vitamin]

D-etails

BY KELLY HORVATH



Each year, the hottest tickets at **ENDO** are the various debates, and **ENDO 2023** will be no exception when experts weigh in on the pros and cons of using vitamin D supplements in female patients at risk for osteoporotic fracture. While Ghada El-Hajj Fuleihan, MD, MPH, will argue in favor, Steven R. Cummings, MD, will present the opposing view in a session that is sure to be a crowd pleaser!

Headed to **ENDO 2023** or still deciding whether to attend? One session not to miss, “Is there a role for vitamin D supplementation for women at risk for osteoporotic fracture?”, happens Thursday, June 15, 2023, from 1:30 PM to 2:30 PM, and promises to be quite an important (not to mention exciting) debate.

By now, in 2023, the vitamin supplementation industry grosses billions of dollars annually, and vitamin D is one of the most sought after. As a transcription factor, vitamin D can partner with a host of cellular receptors, hence the tremendous interest in uncovering just what it can and cannot do.

Always somewhat of a gray area, whether to prescribe vitamin D supplementation became more controversial when the results of the Vitamin D and Omega-3 Trial (VITAL) were published in the *New England Journal of Medicine* in 2019. The highly powered VITAL trial sought to determine whether supplementation with vitamin D reduced the risk of cancer or cardiovascular disease (CVD) and concluded that it did not result in a lower incidence of invasive cancer or cardiovascular events than placebo, despite formerly inconclusive or mixed findings. A substudy found that vitamin D supplementation also does not improve bone mineral density.



Ghada El-Hajj Fuleihan, MD,
MPH, American University of Beirut, Lebanon

“

If you look at the number of citations and publications of vitamin D over the past two decades, it's obvious that there is a need to do something. What I'm hoping this debate will achieve is to bring some granularity to the discussion and some important details to light. Is there another role for vitamin D? I think the debate will be constructive and positive.

”

But does vitamin D help prevent fracture in women with osteoporosis?



On the “Pro side” is Ghada El-Hajj Fuleihan, MD, MPH, physician-scientist and professor of medicine, founding director of the Calcium Metabolism and Osteoporosis Program, WHO Collaborating Center for Metabolic Bone Disorders, and one of the Scholars in the HeAlth Research Program (SHARP), at the American University of Beirut, in Lebanon.

On the “Con side” will be Steven R. Cummings, MD, director, San Francisco Coordinating Center; research scientist, California Pacific Medical Center Research Institute; and emeritus professor of medicine, epidemiology and biostatistics, at the University of California in San Francisco (UCSF).

Dolores M. Shoback, MD, professor of medicine, also at UCSF, and endocrinologist at the VA Medical Center in San Francisco, Calif., will serve as the debate's moderator.

It's no spoiler to state that all three participants are very much looking forward to the debate and the chance to dialogue directly with the respective expert on each side. Not wanting to spill the beans on more than that, however, they are saving the meat of their arguments for the actual debate, but they share enough with us here to whet our appetites in advance.

Supplementation: Thumbs Up

El-Hajj Fuleihan and her laboratory focus on generating evidence on the pathophysiology, prevention, and treatment of hypovitaminosis D, osteoporosis, and other metabolic bone disorders. She leads a team that conducts clinical trials, systematic reviews, and meta-analyses, and translates findings into prevention and treatment strategies. She closely collaborates with Ministry of Health officials and international experts to generate evidence-based national and international care pathways and guidelines.

“The increasing number of systematic reviews and meta-analyses regarding the effect of vitamin D in fractures with contradicting results over the last decade led us to conduct an umbrella review of systematic reviews published to date,” El-Hajj Fuleihan says. In ‘Vitamin D Supplementation and Fractures in Adults: A Systematic Umbrella Review of Meta-Analyses of Controlled Trials,’ published in *The Journal of Clinical Endocrinology & Metabolism* in March 2022, we aimed to dissect the evidence available, rate its quality, and assess relevance of the findings reported to specific populations.”

“Some of the important considerations to guide practice guidelines in subjects at high risk for osteoporotic fractures is evidence from adequately powered randomized



“trials conducted in subjects representative of the population of interest,” El-Hajj Fuleihan states. “Other considerations are nutritional status of study participants at study entry. Does VITAL and other negative large trials published today fulfill such criteria? I will present strong evidence that they do not.”

“I think it’s going to be a very well-crafted session,” she says. “The organizers are working hard to make it happen. If you look at the number of citations and publications of vitamin D over the past two decades, it’s obvious that there is a need to do something. What I’m hoping this debate will achieve is to bring some granularity to the discussion and some important details to light. Is there another role for vitamin D? I think the debate will be constructive and most informative.”

Supplementation: Thumbs Down

For Cummings, who wrote “VITAL Findings — A Decisive Verdict on Vitamin D Supplementation,” published in *NEJM* in July of last year, the proof has to be in the pudding. Cummings is an internal medicine specialist and epidemiologist who has more than 30 years’ experience designing and leading major trials for prevention of fractures, including pivotal studies of alendronate, raloxifene, and denosumab, and large cohort studies about the epidemiology and causes of osteoporosis and fracture, including the Study of Osteoporotic Fractures (SOF), MrOs, and others. He is also an expert in clinical research methods and the design of clinical trials and elected as a member of the National Academy of Medicine.

“The value of vitamin D supplements must be established by randomized placebo-controlled trials,” he says. “Other types of evidence are misleading.” Although VITAL’s primary outcomes were cancer and CVD, Cummings points out that it also failed to show benefit of vitamin D supplementation in the setting of fracture risk. “In 25,871 people age ≥ 55 years (women) and ≥ 50 years (men), VITAL showed

AT A GLANCE

- ▶ At **ENDO 2023**, “Is there a role for vitamin D supplementation for women at risk for osteoporotic fracture?” features three international experts in osteoporosis: two to debate the merit of the long-held belief in the value of vitamin D supplements to prevent fracture in women at high risk for osteoporotic fractures, and one to moderate (Thursday, July 15th, from 1:30 PM to 2:30 PM).
- ▶ The VITAL trial showed no evidence of benefit of vitamin D supplementation on bone health in older people.
- ▶ Findings from the VITAL trial might not be applicable to populations with skeletal fragility/high fracture risk and/or vitamin D deficiency.



Steven R. Cummings, MD,
California Pacific Medical Center Research
Institute, San Francisco, Calif.

“
**Millions of people take
vitamin D supplements,
many based on the
recommendation of their
doctors. It is important
that physicians give
them accurate evidence-
based advice. I believe
that they should advise
patients to focus on
treatments and lifestyle
changes that work. I
hope that is the message
those attending the
debate will bring back
to their patients and
friends.**
”

that vitamin D supplements have no effect on risk of fractures. Even those at ‘high’ risk had low levels of vitamin D. VITAL has also found that they have no benefit for preventing falls or improving bone density. Additionally, large rigorous trials have found no benefit of vitamin D supplements on mortality, CVD, cancer, and numerous other health conditions.”

This debate, he says, “will be an opportunity for those who attend to hear about the physiology of vitamin D, previous studies about vitamin D and fractures, the importance of trusting randomized placebo-controlled trials about the evidence from such trials about the efficacy and safety of vitamin D supplements, and what to advise patients and the public.”

All Things in Moderation

Ideally positioned in the role of moderator, Shoback’s research interests include metabolic bone disease, the calcium-sensing receptor, and parathyroid hormone. From an epidemiological/observational standpoint, insufficient vitamin D levels are credited with contributing to worse outcomes from everything from COVID-19 to CVD to depression. This, explains Shoback, is “association science,” however, and not backed up with data from a rigorous clinical trial.

One limitation here, she points out, is that the osteoporotic high-risk population who would be most likely to benefit from vitamin D supplementation for fracture risk reduction would be conversely almost impossible to study. Given these patients’ inherently vitamin D-deficient status, most clinicians would make them vitamin D replete as well as treat for osteoporosis, thus eliminating the possibility of having an adequate control population.

“So, we expect a lively debate from a clinician/clinical investigator interested in skeletal health (El-Hajj Fuleihan) and on the other hand, an epidemiologist who’s also very interested in clinical trials and bone health and the health of people as they age (Cummings),” Shoback says. “I’m thrilled to have two experts of credibly high caliber taking on this issue for the clinical and research endocrine audience. We’re very fortunate to have them.”

Closing Remarks

Interestingly, despite VITAL’s conclusions, “clearly there are experts with divided opinions on both ends of the camp, and I think this debate will be instrumental in identifying some of the issues that have led to this confusion,” El-Hajj Fuleihan says. “In any debate, arguments would depend on how one evaluates the data, examines its limitations, and assesses its generalizability to the population of interest. Although VITAL’s editorial has attempted to provide a ‘decisive verdict’ and to ‘put the nail in the coffin’ on vitamin D supplementation, that topic is still full of life.”

For Cummings’ part, he says, “millions of people take vitamin D supplements, many based on the recommendation of their doctors. It is important that



ENDO2023

Endocrine Debate — Is There a Role for Vitamin D Supplementation for Women at Risk for Osteoporotic Fracture?

June 15, 2023 1:30 PM – 3:00 PM

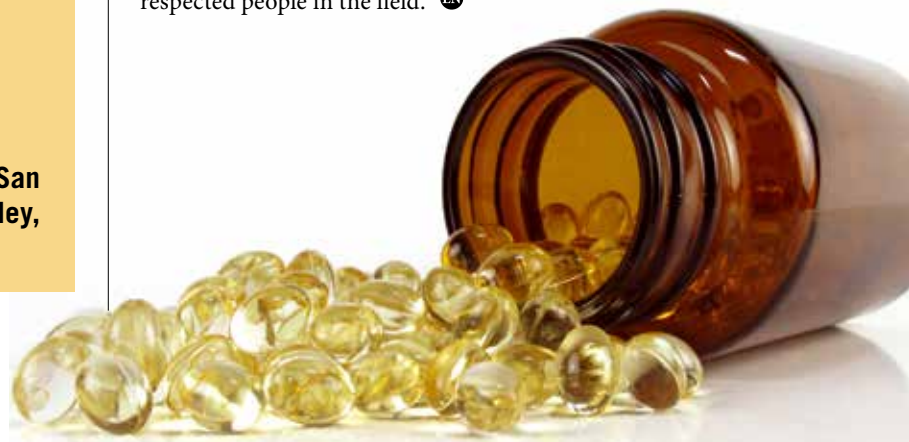
Moderator: Dolores M. Shoback, MD, UCSF/VA Medical Center, San Francisco, Calif.

Pro Argument: Ghada El-Hajj Fuleihan, MD, MPH, American University of Beirut, Beirut, Lebanon

Contra Argument: Steven Cummings, MD, San Francisco Coordinating Center, Mill Valley, Calif.

physicians give them accurate evidence-based advice. I believe that they should advise patients to focus on treatments and lifestyle changes that work. I hope that is the message those attending the debate will bring back to their patients and friends.”

The bottom line is: Clinicians must both use evidence-based approaches in the care they provide and think carefully about the individual and their comorbidities to individualize care. This coming debate may help endocrinologists strike that balance. “Please come listen to the arguments,” agrees Shoback. “They’re both fiercely data-driven people and two of the most respected people in the field.” ^{EN}



— HORVATH IS A FREELANCER WRITER BASED IN BALTIMORE, MD. IN THE MARCH ISSUE, SHE UNDERTOOK THE HERCULEAN EFFORT OF CONDUCTING THE “WOMEN IN ENDOCRINOLOGY” ROUNDTABLE, SPEAKING WITH 10 OUTSTANDING ENDOCRINE SOCIETY MEMBERS.



With the recent reexamination of how to consider race/ethnicity in medical treatment, many practitioners may feel confused about implementing such procedures. The **ENDO 2023** symposium “Addressing Racial and Ethnic Disparities in Osteoporosis Care” will provide attendees with an understanding of the impact of incorporating race/ethnicity in osteoporosis care and provide suggestions for treating their own patients.

Breaking Barriers in Bone Health

BY ERIC SEABORG

One of the most important movements in medicine today is the examination of racial and ethnic inequities in care — and how to remedy them. The Endocrine Society will continue its leadership on this issue with a session at June’s **ENDO 2023** on “Addressing Racial and Ethnic Disparities in Osteoporosis Care.”

“Broadly speaking, in medicine right now there is a general reckoning on how we consider race and ethnicity in clinical algorithms,” according to session moderator Joy Y. Wu, MD, PhD, who is chief of the Division of Endocrinology at Stanford University School of Medicine. “Educating physicians and the healthcare workforce about disparities and how to screen and treat patients from a culturally relevant perspective is important.”

A 2021 review in the *Journal of Bone and Mineral Research* provided some snapshots of disparities — and complexities — in osteoporosis care. The review found that as a population non-Hispanic Black adults have higher bone mineral density and a lower prevalence of osteoporosis compared with Hispanic, non-Hispanic White, and Asian adults. And yet, researchers have known for decades that Black men and women have significantly higher mortality following a hip fracture than their White counterparts. These worse outcomes could be related to the fact that Black adults are less likely to receive osteoporosis screening and treatment compared with White adults.

Risk Assessment

The Fracture Risk Assessment Tool (FRAX) is the most widely used tool to predict fracture risk in the United States. It rates the 10-year risk of hip and major osteoporotic fractures based on age, sex, smoking and drinking status, parental and personal history of fractures, and certain medications and medical conditions as well as race and ethnicity. The U.S. FRAX calculator returns a lower fracture risk for patients identified as Black, Asian, or Hispanic, compared with White patients.

Diagnostic tools that include race as a variable are coming under increasing scrutiny. One of the most prominent examples of a





“ Broadly speaking, in medicine right now there is a general reckoning on how we consider race and ethnicity in clinical algorithms. **Educating physicians and the healthcare workforce about disparities and how to screen and treat patients from a culturally relevant perspective is important.**”

— JOY Y. WU, MD, PHD, CHIEF, DIVISION OF ENDOCRINOLOGY, STANFORD UNIVERSITY SCHOOL OF MEDICINE, STANFORD, CALIF.



revised diagnostic algorithm is the estimated glomerular filtration rate (eGFR) formula for kidney function. For many years, the most commonly used eGFR formula singled out Black patients with an adjustment factor that gave them a score indicating better kidney function for a given creatinine level — despite the fact that Black Americans experience kidney disease at higher levels than the White population.

Spurred on by the idea that race is a social construct, not a biological one, the American Society of Nephrology and the National Kidney Foundation combined to lead a comprehensive review of the appropriateness of this approach. Researchers went back to the original data used to calculate the formula and combined them with newer data to create a new formula to apply to all patients regardless of their race.

The Endocrine Society and others are reconsidering the use of race in FRAX, but a race-free, eGFR-like solution may not turn out to be the best approach for osteoporosis, according to Wu. “FRAX is based on large reference databases from around the world,” Wu says, with some 70 countries developing their own models. A few of these include race or ethnic adjustments.

“The hope is we could have more refined calculations for individuals” with more data, Wu says, because the interplay of ethnicity and treatment can be complex. For example, for a given bone mineral density, U.S. women of Asian descent have lower rates of hip fracture than their White counterparts. Yet, among those being treated with bisphosphonates, Asian women have higher rates of the rare complication of atypical femur fracture. “So the risk-benefit calculation is different among population groups, and that is one area where it could be very important to know race and ethnicity,” Wu says.

She also notes that the limited number of race choices that can be input into the formula can mask great heterogeneity. “Within the ‘Asian’ category, there are more than 20 countries of origin. It is an incredibly heterogeneous range of geography, culture, diet, and socioeconomic status, so many things that impact our health outcomes,” Wu says.

As with any tool in medicine, FRAX needs to be updated periodically and the changes need to be guided by science, says Ruban Dhaliwal, MD, MPH, whose contribution to the ENDO session will focus on “Strategies to Reduce Skeletal Health Disparities.” Dhaliwal is the Endocrine Society’s health equity researcher and chairperson, as well as lead author of “Eradicating Racism: An Endocrine Society Policy Perspective,” which appeared in *The Journal of Clinical Endocrinology & Metabolism* in 2022.

She notes that whatever the future holds for FRAX, there are steps clinicians can take in their practices to lessen inequities. Although screening for osteoporosis has established benefits in reducing fracture risk through the implementation of lifestyle modification and pharmacological treatment, “certain subgroups of the U.S. population are screened 40% less than other groups. As gatekeepers, it is incumbent upon physicians to optimize the use of the tools available,” Dhaliwal says.

Clinicians should educate patients about screening recommendations and enlist the capabilities of electronic health records, which have built-in abilities to provide healthcare maintenance reminders, to make sure their patients are being screened for osteoporosis.



AT A GLANCE

- ▶ As in many aspects of medicine, there are racial and ethnic disparities in osteoporosis screening and outcomes.
- ▶ FRAX, the most commonly used fracture risk assessment tool, contains an adjustment factor for race that is currently being reassessed.
- ▶ Endocrinologists have an important role to play in contributing to more equitable application of resources in osteoporosis care.



“Clinicians can ensure their workforce matches the demographics that they serve, which can help build trust in the community. Building trust in the community can help activate and promote patient engagement. **Another role that even a sole practicing clinician can take on is advocacy, to look for places to enhance access to care. Physicians are the best voice for their patients.**”

— RUBAN DHALIWAL, MD, MPH, SUNY UPSTATE MEDICAL UNIVERSITY, SYRACUSE, N.Y.

ENDO2023

Addressing Racial and Ethnic Disparities in Osteoporosis Care

June 16, 2023 10:30 a.m. – 12:00 p.m.

Chair: Joy Y. Wu, MD, PhD, Stanford University School of Medicine, Stanford, Calif.

- ▶ Racial/Ethnic Disparities in Risk of Atypical Femoral Fracture, **Angela Man-Wei Cheung, MD, PhD, University of Toronto/University Health Network, Toronto, Ontario, Canada**
- ▶ Controversies and Recommendations Surrounding the Use of Race or Ethnicity in US FRAX, **Sherri-Ann M. Burnett-Bowie, MD, MPH, Massachusetts General Hospital, Boston, Mass.**
- ▶ Strategies to Reduce Skeletal Health Disparities, **Ruban Dhaliwal, MD, MPH, SUNY Upstate Medical University, Syracuse, N.Y.**

Another effective tool that should see more widespread use is the fracture liaison service, which “has been consistently shown to improve outcomes in patients with osteoporosis-related fractures. We need a systemized application of these services to reduce inequities across healthcare institutions,” Dhaliwal says. “There is a great deal of work to be done to improve access to care and enhance the quality of service.”

Beyond Bones

On organizational and community levels, clinicians can take steps to lessen racial inequities, Dhaliwal says: “Workforce diversity in clinical and non-clinical settings is an important component of interventions aimed at reducing health disparities and advancing health equity. Clinicians can ensure their workforce matches the demographics that they serve, which can help build trust in the community. Building trust in the community can help activate and promote patient engagement. Another role that even a sole practicing clinician can take on is advocacy, to look for places to enhance access to care. Physicians are the best voice for their patients.”

“We need to raise public awareness about osteoporosis as an important public health burden,” Wu concludes. “It is something that can be screened for and managed. An important message is that fractures are not necessarily inevitable with aging because screening and prevention could reduce the number of fractures.” ^{EN}

— SEABORG IS A FREELANCE WRITER BASED IN CHARLOTTESVILLE, VA. IN THE JANUARY ISSUE HE WROTE ABOUT THE ENDOCRINE SOCIETY'S NEWEST CLINICAL PRACTICE GUIDELINE, “MANAGEMENT OF INDIVIDUALS WITH DIABETES AT HIGH RISK FOR HYPOGLYCEMIA.”

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BY GLENDA FAUNTLEROY SHAW



PHISH TANK

Stories about healthcare institutions having their computer systems hacked and patient data compromised seem to be on the rise, but research laboratories are not immune. As cyberattacks increase, there are a few simple steps to make sure your research stays secure.

Avoiding Cyberattacks in the Lab

Since the start of the pandemic, cyberattacks have become a bigger threat to hospitals and health systems as attacks on these institutions are on the rise. The time to be aware of what you and your institution should do to protect your assets is yesterday.

Cybercrime is an increasing problem for both businesses and individuals. In a release issued in March, the FBI reported that, overall, internet crime is up 7% since early 2020. Phishing email attacks resulted in the biggest impact to businesses in 2021 with financial losses of more than \$2.3 billion, according to the report.

A few notorious examples of such attacks on health institutions include:

- ▶ In February, Georgia-based Cytometry Specialists, Inc., also known as CSI Laboratories, discovered a cyberattack had partially disrupted the cancer testing lab's information systems. Cybercriminals acquired files containing patient information, including names, birth dates, medical record numbers, health insurance information, and case numbers.
- ▶ Spokane Regional Health District discovered in April that it had fallen victim to the second phishing email attack

in three months after an employee once again responded to a phishing email. In the first attack, Spokane Regional Health disclosed that the breach allowed the release of 1,260 patients' data.

- ▶ In October 2020, staff at the University of Vermont Medical Center lost access to their computers, leading the IT staff to locate a file with instructions to contact the alleged perpetrators of the cyberattack. The center instead chose to lock down email, internet, and major parts of the organization's computer network to stop further damage — causing UVM employees to lose use of electronic health records, payroll programs, and other digital tools for almost a month. The interruptions cost an estimated \$50 million in lost revenue, even though the medical center never paid a ransom fee.

In its “2020 HIMMS Healthcare Cybersecurity Survey,” HIMSS (Healthcare Information and Management Systems Society) reported that 70% of survey respondents said their organization experienced “significant incidents in the past 12 months.” Phishing attacks were the highest security incident with 57% of respondents reporting an incident.



“ Traditionally, research institutions have a culture of sharing and helping others, so **ensuring confidentiality and all-around good security have not always been top of mind.**”

— LEE KIM, SENIOR PRINCIPAL OF CYBERSECURITY AND PRIVACY, HEALTHCARE INFORMATION AND MANAGEMENT SYSTEMS SOCIETY



It may seem like things are going smoothly as you enter report data from your latest experiments (left). However, hackers are always on the lookout for easily compromised info (above), even from research facilities.

“A significant risk is the theft of intellectual property, which may include trade secrets and patentable inventions, **and other kinds of research data and sensitive data.**”

— LEE KIM, SENIOR PRINCIPAL OF CYBERSECURITY AND PRIVACY, HEALTHCARE INFORMATION AND MANAGEMENT SYSTEMS SOCIETY

Lee Kim, senior principal of cybersecurity and privacy at HIMSS, says cyberattacks should be a significant concern for scientists and researchers in medical labs in the U.S.

“A significant risk is the theft of intellectual property, which may include trade secrets and patentable inventions, and other kinds of research data and sensitive data,” Kim says. “Traditionally, research institutions have a culture of sharing and helping others, so ensuring confidentiality and all-around good security have not always been top of mind.”

According to the HIMMS survey, financial information is what’s most sought after in cyberattacks, but “threat actors,” what cybercriminals are referred to, typically go after three types of information: financial, employee information, and patient. This information has high value on the dark web.

With phishing being the highest security incident, email was the initial point of compromise in 89% of the incidents, reported HIMMS. Those numbers should alarm any lab researcher and manager who uses email on computers in the lab.

Kim says the good news is that recently there is greater awareness of institutions about cybercrimes, and both leaders and IT professionals are making the investments to protect their institution’s systems.

“More institutions are implementing data loss prevention, encryption, multi-factor authentication, and other measures to ensure greater confidentiality and integrity of data,” Kim adds. ^{EN}

Stay Safe

Cybersecurity experts offer the following advice to universities or healthcare institutions about handling their computer systems and email usage to avoid falling victim:

Be suspicious of emails. “Do not assume that you can click on any link or attachment that arrives in your inbox,” says Kim. “Ransomware and other types of malware are frequently distributed by phishing emails. If something looks suspicious or fishy (no pun intended), don’t open the email, click on any links, or open any attachments. Follow your organization’s protocol to report the suspected phishing email to the appropriate point of contact, such as your helpdesk team.”

Be aware of insiders. “Insider threat, whether negligent or malicious, is always a risk at any organization,” Kim says. Accordingly, theft of intellectual property and other data may occur due to a negligent or malicious insider, not just a cyberattack. That insider need only have trusted access, so the person may be an employee, contractor, or other third party with trusted access.

Conduct regular security awareness training. Anyone with access to your system needs to be aware of cyber threats, and your IT staff should implement a robust email security solution. “Ideally, the email security solution should accurately detect, contain, and/or mitigate these threats and should be paired with the most up-to-date and accurate threat intelligence,” Kim says.

Keeping phishing statistics. Which staffers fail the phishing tests, and who are repeat offenders? “You may want to spend extra time with these individuals in terms of awareness training and ensuring that appropriate controls are in place, such as email isolation,” Kim advises.

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



Endocrine Society Past-President Carol Wysham, MD, and President-Elect Steven R. Hammes, MD, PhD, on their way to meet with elected representatives and advocate for endocrine priorities related to funding for biomedical research and treatment and prevention of diabetes.

On April 17, a group of Endocrine Society members walked the halls of Congress to meet with their elected representatives and advocate for our priorities related to funding for biomedical research and treatment and prevention of diabetes.

Our asks were timely and important; we urged Congress to support an overall funding level of \$51 billion for the National Institutes of Health (NIH) in fiscal year (FY) 2024, or an increase of 7.3% applied equally toward all institutes and centers. For diabetes-related programs, we had two important requests:

- ▶ We advocated for legislation to make insulin affordable for those who rely on it by providing a cap on out-of-pocket costs for the private insurance market.
- ▶ We urged Congress to provide a long-term reauthorization of the Special Diabetes Program (SDP) before it expires on September 30.

Our timing was particularly appropriate. The Hill Day occurred while Congress was in the process of establishing overall funding levels for the coming fiscal year, which will affect funding for the NIH and other public health programs. Additionally, the Senate Diabetes Caucus was hoping to find

Endocrine Society Advocates for NIH Funding, Diabetes Prevention During Diabetes Hill Day

additional co-sponsors for legislation it hopes to introduce known as the INSULIN Act, comprehensive legislation to lower the cost of insulin, and was looking for support for reauthorization of the SDP.

While all these issues have historically been bipartisan priorities, Congress is dealing with numerous issues amidst an uncertain budgetary environment. Advocacy by Society members remains critically important to ensure that all representatives and senators are aware of our priorities and that they will support them.

As a result of our Diabetes Hill Day, we were able to educate many congressional offices about our priorities. Our members were able to establish relationships with the representatives and senators and serve as resources to them. We encouraged several additional congressional offices to join the Diabetes Caucus, making it the largest bipartisan caucus in Congress. We also were able to encourage several senators to become co-sponsors of the INSULIN Act and several House and Senate members to share support for the SDP.



Incoming Endocrine Society President Steven R. Hammes, MD, PhD, with Senator Susan Collins (R-ME) on the Society's Diabetes Hill Day April 17.


Endocrine Society Hosts Special Event for Medical Students and Residents at ENDO 2023



The Endocrine Society will host medical students and residents from the Chicago area at a new special event — Endocrinology Mentor Day (eMD) — at **ENDO 2023**. This is a pilot program designed to drive medical students' and residents' interest in endocrinology and connect them with leaders in the field.

Participants will be matched with an Endocrine Society member as their “mentor.” The mentors will guide the attendees around **ENDO**, including to an **ENDO** session, a plenary, and the exhibit hall. Students and residents will also have an opportunity to learn about continuous glucose monitors (CGMs) by attending an interactive session, sponsored by Abbott Pharmaceuticals. All participants will be offered a complimentary one-year Endocrine Society membership.

This event is free to medical students and residents in the Chicago area. Additionally, medical school students and residents who are planning to attend **ENDO** can sign up for eMD and will receive a retroactive discount on their registration for the meeting.

We encourage all Endocrine Society members to share information about eMD with their networks in the Chicago area and with students or residents who already plan to attend **ENDO**. To learn more and register, please visit www.endocrine.org. 

Learn About How You Can Become an Effective Advocate

The Endocrine Society has a robust advocacy program. Our policy priorities include research funding, access to care, physician payment, regulation of endocrine-disrupting chemicals, diabetes prevention and treatment, and obesity.

We have several ways Endocrine Society members can participate in our advocacy activities. The easiest way is to join one of our online advocacy campaigns. Please visit endocrine.org/takeaction to see our campaigns. We provide background information and an email that you can personalize if you wish. Our software will also direct the message to the correct mailbox on Capitol Hill. This will only take a minute of your time but will have a significant impact.

In addition, we are offering two sessions during **ENDO 2023** in Chicago on how you can advocate:

**“How to Advocate for your
Research”**

will take place June 15 at 10:00 AM

**“How to Advocate for your Patients
& Practice”**

will take place June 16 at 10:30 PM

We hope you will join us!



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