

OCTOBER 2013

THE LEADING MAGAZINE FOR ENDOCRINOLOGISTS

ENDOCRINE **news**

When **KIDNEY TRANSPLANTS FAIL**

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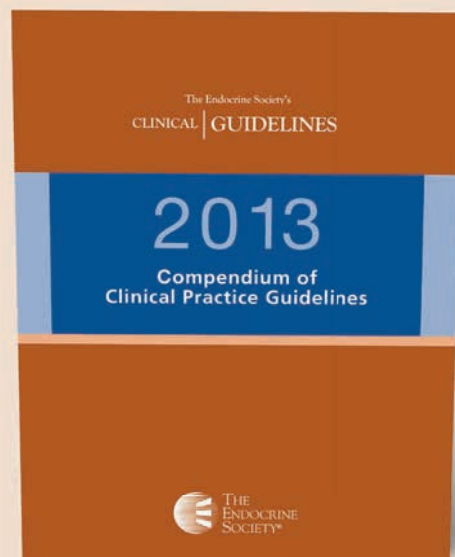
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- Hyperprolactinemia
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- Pituitary Incidentaloma
- Thyroid Dysfunction during Pregnancy
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- Testosterone Therapy in Men with Androgen Deficiency Syndrome (Updated)
- Evaluation and Management of Adult Hypoglycemic Disorders
- Endocrine Treatment of Transsexual Persons
- Evaluation and Treatment of Adult Growth Hormone Deficiency
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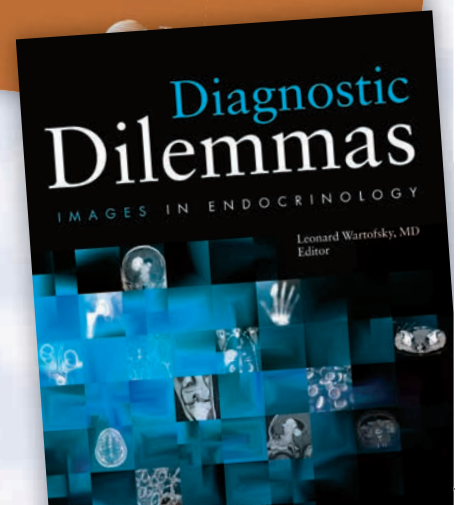
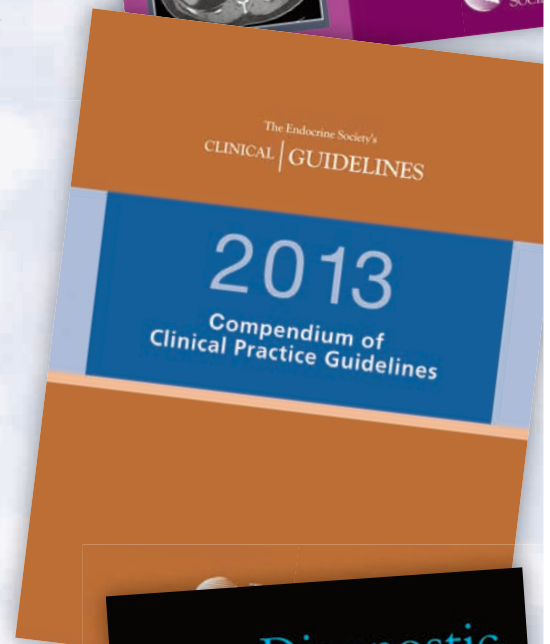
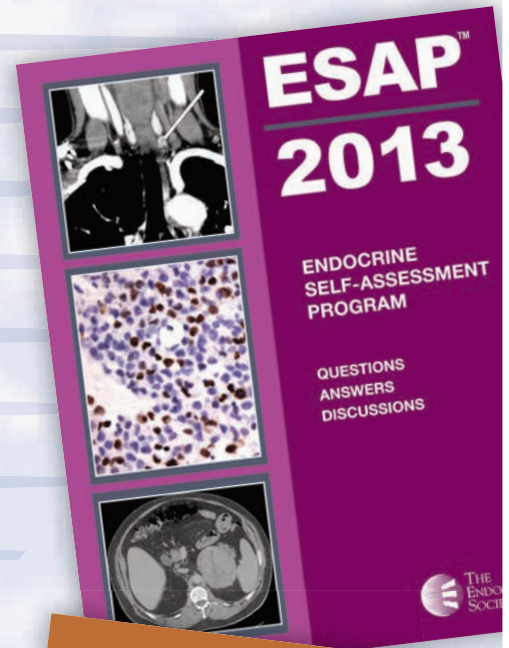
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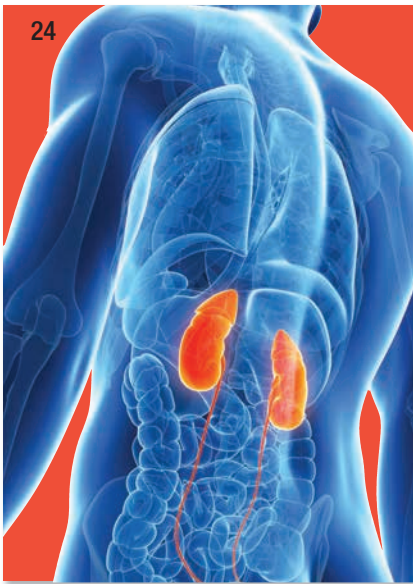


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23 Meet Barbara Byrd Keenan

By Mark A. Newman

Barbara Byrd Keenan has been named The Endocrine Society's new CEO upon Scott Hunt's retirement after 25 years. Get a first introduction to the person who will lead the Society through a pivotal period in its ongoing growth.

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By Aalok Mehta

The evidence is clear: Not taking immune-suppressing meds as prescribed threatens transplanted kidneys. So why do so many patients stray?

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Despite the infamous "munchies" associated with marijuana use, it appears that pot has the ability help regulate blood sugar and stifle weight gain. While many experts oppose the use of medicinal marijuana in raw plant form, the drug could be a new breakthrough in diabetes treatment.

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Shared medical appointments are gaining acceptance among patients and doctors alike and could be a unique solution for diabetes care.

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Exciting Changes Coming for the LAUREATE AWARDS

The Endocrine Society's distinguished Laureate Awards honor the best and brightest in our field for their groundbreaking research and innovations in clinical care. I am delighted to announce The Endocrine Society is launching four new awards: Outstanding Mentor Award, Outstanding Public Service Award, Gerald D. Aurbach Award for Translational Research, and the Outstanding Innovation Award.



Teresa K. Woodruff, PhD

Each year, the Society presents three quarters of a million dollars (\$725,000) in awards to endocrinologists at all stages of their careers. The Laureate Awards recognize endocrinologists around the world for seminal research, groundbreaking discoveries, promising investigative research, dedication to education, clinical care, innovation, and non-traditional endeavors that have local impact on individuals in emerging countries. The Society is making exciting changes to ensure the awards complement the Society's mission to advance excellence in endocrinology and promote its essential and integrative role in scientific discovery, medical practice, and human health.

"The Laureate Awards recognize endocrinologists around the world for seminal research, groundbreaking discoveries, promising investigative research, dedication to education, clinical care, innovation, and non-traditional endeavors that have local impact on individuals in emerging countries."

In January 2013, I led a task force to review the full portfolio of Laureate Awards to identify opportunities to enhance the recognition of award recipients and their achievements, home institutions and practices, and to advance careers. Additionally, the task force modified existing award titles to better describe their purpose.

Another evolution in recognizing our Laureate winners involves the lecture aspect of the awards. The task force explored ways for all Laureate Award recipients to be considered for lectures and other opportunities to engage with attendees at ENDO. This change gives us the

opportunity to highlight every one of our distinguished awardees and create opportunities (plenaries, symposia, workshops, meet-the-professors) to engage with ENDO attendees. The Society also invests heavily in trainee recognition. Enhancements in these "accelerator awards" will be rolled out by our Training and Career Development Core Committee in the coming months. So stay tuned and check the website often!

This month, the Society will open the floor for 2015 Laureate Award nominations. I call on all voting members of the Society (including In-Training Associates with doctoral degrees) to participate in the nomina-

THE LAUREATE AWARDS

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 Roy O. Greep Award for Outstanding Research
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 Richard E. Weitzman Outstanding Early Career Investigator Award

tion process to recognize and celebrate the outstanding accomplishments of their peers. Visit the Society's Laureate Awards website for additional information or contact laureate@endocrine.org

If you have any questions or comments, feel free to contact me at president@endo-society.org. EN

Teresa K. Woodruff, PhD
 President, The Endocrine Society

OCTOBER 2013

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.

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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This month's cover story deals with the thorny topic of why many kidney transplants fail. The topic is prickly because there's more than one reason for this failure. One of the chief culprits is the patient, who often goes off his or her meds for one reason or another. Another culprit is Medicare, which only pays for the drugs for three years post-transplant, yet the patients need them for the rest of their lives. Aalok Mehta addresses these issues and possible solutions in his in-depth article "Staying the Course," (page 24).

As states are stepping up and voting to legalize medicinal and recreational marijuana, new attention is being paid to the drug's possible use in a variety of chronic diseases, most notably diabetes. As expected, there are many different opinions on this topic so Melissa Mapes sorts through the research in "Pot Luck," (page 28). Despite the much-parodied "munchies" in movies and song, marijuana has the potential to control obesity, yet another weapon in the endocrinologist's arsenal to fight this burgeoning epidemic.

We were all taught that sharing is the right thing to do since we were small children. Some practices are taking that concept a step further and instituting shared medical appointments for their patients as highlighted in Kurt Ullman's "Happy Together," (page 30). Part group therapy, part educational seminar, shared appointments could be a viable solution for an overburdened or smaller office.

Also, we have an introduction to The Endocrine Society's new CEO, Barbara Byrd Keenan (page 23). She will be stepping into Scott Hunt's sizable shoes upon his retirement after 25 years at the helm. In speaking with her, I was struck by her philosophy about associations like the Society; she firmly believes that an association should not only be there to serve its members but also the people who are helped by the members. A philosophy like this ensures she will fit in very well at the Society.

If you have any story ideas or topics you'd like to see covered in *Endocrine News*, don't hesitate to contact me at mnewman@endocrine.org. I always enjoy hearing from our members and readers. EN



Mark A. Newman,
Managing Editor

Mark A. Newman
Managing Editor, *Endocrine News*



FULL MOON Eclipses Good Night's Sleep

Ever blamed the full moon for certain behavioral quirks? A new study finds that lunar phases affect sleep patterns, just as folklore has always told.

Christian Cajochen, PhD, at the University of Basel, Switzerland, and his team of researchers studied 33 sleep lab participants for three years starting in 2000, taking electroencephalograms (EEGs) during non-rapid eye movement sleep, measuring nocturnal melatonin and cortisol secretion, and getting subjective feedback on how well rested the participants felt the next day, initially to determine whether age and gender affected sleep patterns. In a surprise twist 10 years later, the team decided to re-analyze their data in relation to lunar phase, largely because as much as 40% of the population anecdotally blames bad sleep on the full moon. In their paper, published in *Current*

Biology, the researchers report that both the objective and subjective measures of human sleep varied with lunar phase—EEGs showed 30% less deep sleep and 20 minutes less total sleep, late evening melatonin levels decreased, and time to fall asleep increased five minutes. Interestingly, “because this study was ‘double blind,’ such that neither the volunteers nor the investigators were ever aware of the purpose of this retrospective analysis, we can exclude potential placebo and nocebo effects,” says Cajochen.

The researchers posit that their findings show human circalunar rhythmicity is not an old wives’ tale after all and that clinicians should consider patients’ periodic sleep complaints carefully. Next steps should focus on “finding out the cause of why we might sleep differently when there is a full moon,” they add.

— Kelly Horvath

Using Social Media TO FIGHT OBESITY

In a study published in *PLOS ONE*, scientists, led by Rumi Chunara, PhD, of Boston’s Children’s Hospital’s Informatics Program (CHIP), looked at data on the proportion of obese and/or overweight populations in metropolitan areas across the U.S. and in New York City neighborhoods, and then cross-referenced those statistics with Facebook aggregate information drawn from what people “like,” as well as other information on their profile and their activity. At the time of the study, about half of the population of the U.S. had a Facebook account.

Nationally, the areas that showed the most activity-related Facebook likes had obesity rates 12% lower than the rest of the country. In NYC, the neighborhood where exercise was most popular — Coney Island — showed a 7.2% lower obesity rate than the neighborhood with the least interest in exercise, southwest Queens.

Across the country, obesity rates were only 3.9% higher in areas where Facebook users liked things such as watching television. However, rates were 27.5% higher in northeast Bronx — the NYC neighborhood with the most interest in TV — than they were in Greenpoint, which had the least interest in TV.

The authors concluded that based on these results, social media outlets should be considered as vehicles for collecting data on where obesity rates are most widespread, because information can be obtained unobtrusively, inexpensively, and in real time. These platforms could also be used to intelligently aim health interventions, as the data could inform location-specific campaigns through the same social media platforms.



RECOMBINANT HUMAN GROWTH HORMONE, Body Composition and Muscle Strength in Children

Children suffering from a chronic disease can develop serious conditions due to chronic inflammation, long-term steroid therapy, and decreased physical activity. A team of researchers, led by Dominique Simon, MD,

of Hôpital Robert Debré, set out to evaluate rhGH effects on muscle strength in children receiving long-term glucocorticoid therapy. They also wanted to assess the hormone’s effects on height and body composition.

Detailed further in a paper recently published in the *Journal of Clinical Endocrinology and Metabolism*, the scientists studied 30 children (25 boys and 5 girls) with varying chronic diseases in a randomized, controlled, delayed-start study of rhGH for 12 months, started after randomization (baseline) or six months later (M6).

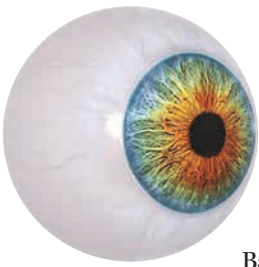
After six months, high-doses rhGH therapy (0.065mg/kg/d) did not significantly affect composite index of muscle strength.

However, the rhGH-treated group showed increases in height, lean mass, and thigh muscle area, compared with the untreated group. After one year of rhGH therapy, height, lean mass, and thigh muscle area increased significantly, but muscle strength was not profoundly changed, while height-related muscle strength remained in the normal range.

While rhGH therapy did not change muscle strength all that much, it was well tolerated and did lead to improvements in height and helped maintain height-related strength. The authors wrote, “These data provide a useful basis for future research aimed at optimizing physical fitness in chronically ill children.”

— Derek Bagley





FIRST MOUSE MODEL Made of Graves' Orbitopathy

In a study recently published in the journal *Endocrinology*, researchers led by J. Paul Banga, PhD, King's College

London School of Medicine in the United Kingdom, considered the TSH receptor (TSHR) and IGF-1 receptor (IGF-1R) to be relevant antigens. They then showed that when female mice were immunized with human TSHR (hTSHR) A-subunit plasmid, the mice developed orbital pathology, characterized by interstitial inflammation of extraocular muscles, with the inflammation caused by CD3+T cells, F4/80 macrophages, and mast cells, accompanied by glycosaminoglycan deposition with resultant separation of individual muscle fibers.

The scientists wrote that in vivo MRI scans of the mouse orbital region provided "clear and quantifiable evidence" of orbital muscle hypertrophy with protrusion (proptosis) of the eye, lending even further credence to this new model.

All 22 female BALB/c mice immunized with hTSHR A-subunit plasma showed bilateral orbital pathology, with two of those mice developing apparent unilateral protrusion of the eyes. None of the 12 mice immunized with control plasmids showed any orbital pathology or disease, they wrote.

"Overall," the authors concluded, "these findings support TSHR as the pathogenic antigen in Graves' orbitopathy (GO). Development of a new preclinical model will facilitate molecular investigations on GO and evaluation of new therapeutic interventions."

— Derek Bagley

LOW INFLAMMATION AND METABOLIC HEALTH in Obese People

Obese people are often at a greater risk for health concerns, but they don't always develop metabolic issues, a phenomenon that could be explained by reduced levels of inflammation.

In a recent study published in the *Journal of Clinical Endocrinology and Metabolism*, scientists led by Catherine Phillips, BSc, PhD, of the University College Cork in Ireland, analyzed 2,047 participants aged 50 to 69, classified as obese (BMI >30) and non-obese (BMI <30), between 2010 and 2011. Patients completed lifestyle questionnaires, were assessed physically and clinically, and underwent blood testing to determine inflammatory markers and metabolic profiles.

The researchers defined metabolic health status using five existing metabolic health definitions based on a range of cardiometabolic abnormalities. Serum acute-phase reactants, adipocytokines, pro-inflammatory cytokines, and white blood cell counts were determined.

Metabolically healthy obese (MHO) people in the cohort exhibited reduced levels of

inflammatory markers, such as white blood cells and acute-phase response proteins, as well as increased levels of adiponectin — which has an anti-inflammatory effect — compared to their metabolically unhealthy counterparts. This same favorable inflammatory profile is positively associated with metabolic health in both obese and non-obese people, the researchers noted.

These findings are of public health and clinical significance, the authors concluded. Obesity diagnosis, particularly of those at greatest cardiometabolic risk, requires improvement. Better understanding of the association between MHO and inflammation may have implications for predicting those at greatest risk of developing the most serious obesity-related complications.

— Derek Bagley



Vitamin D Receptor Inhibits Expression of BROWN FAT

The Vitamin D Receptor (VDR) may play a role in blocking the process that turns adipocytes into brown fat, according to recent findings published in the journal *Molecular Endocrinology*.

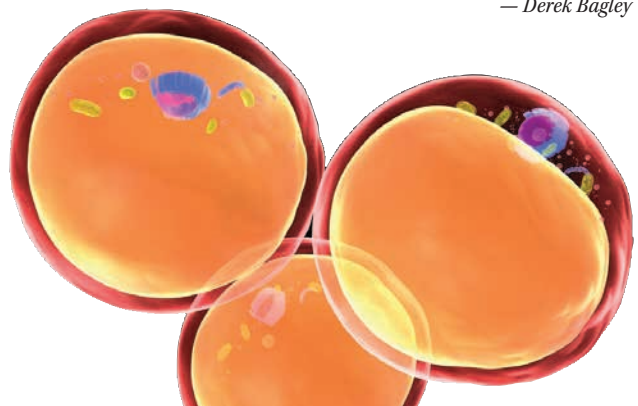
The study, by Peter J. Malloy, PhD, and Brian J. Feldman, MD, PhD, both of Stanford University, says that obesity reflects an "imbalance between energy storage and energy expenditure" and often results in far more serious complications like metabolic and cardiovascular diseases. Therefore, the scientists wanted to take a closer look at what affects the energy expenditure process.

Using dermal fibroblasts from patients with Hereditary Vitamin D Resistant Rickets (HVDRR), the researchers found that the VDR directly inhibits the expression of uncoupling protein-1 (UCP-1), "the critical protein for uncoupling fatty acid oxidation in brown fat and burning energy." They also found that when the VDR is removed, UCP-1 expression increases, resulting in "browning" of adipocytes.

Malloy and Feldman noted that this process occurs cell-autonomously and independent of the physiologic VDR hormone ligand, 1,25-dihydroxyvitamin D.

"Importantly," they concluded, "our data suggest a paradigm where VDR modulates beige versus white adipocyte identity as opposed to a toggle in the recruitment of distinct progenitor cell populations. We believe these results will have important implications for human health."

— Derek Bagley



OBESE MOTHERS Produce Offspring with Increased Mortality, Cardiovascular Problems

Mothers who were obese during pregnancy produced offspring with greater risk of health problems and shorter life spans, according to a study recently published in the journal *BMJ*.

The increased mortality results especially from cardiovascular problems when the offspring reach adulthood.

Researchers led by

Rebecca M. Reynolds, MD, PhD, at the University of Edinburgh, Scotland studied 37,709 people with birth records from 1950 to 1976, gathered from the Aberdeen Maternity and Neonatal databank, and then followed them until the present day through the General Register of Deaths, Scotland, and the Scottish Morbidity Record systems.

All women who had a live singleton birth at term from 1950 to 1976 and who had their weight taken at their first antenatal visit were identified from the databank, and then grouped according to BMI. Their offsprings' birth records were then linked to the death and morbidity registries to determine outcomes of mortality and cardiovascular events (angina, myocardial infarction, stroke, and others).

The scientists found that among the 37,709 offspring, there were 6,551 deaths from any cause, up until Jan. 1, 2012. The leading cause was cardiovascular disease (24% of deaths

in men and 13% of deaths in women) and cancer (26% of deaths in men and 42% of deaths in women). They wrote that there was a significant increase in all-cause mortality in the offspring of mothers who were overweight or obese (BMIs of 25 – 29.9 and >30, respectively).

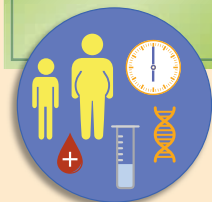
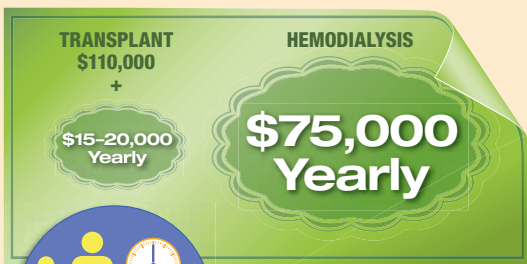
They also found that overall, 7.6% of the offspring cohort had been admitted to the hospital with some sort of cardiovascular event, with a significant association between the mothers who were overweight or obese and increased cardiovascular events in their offspring.

Only 4% of the mothers in the cohort of 28,540 women were obese, a number that is far smaller than today's current levels. The authors concluded that their findings "highlight the urgent need for strategies to prevent obesity in women of childbearing age and the need to assess the offspring of obese mothers for their cardiovascular risk."

— Derek Bagley

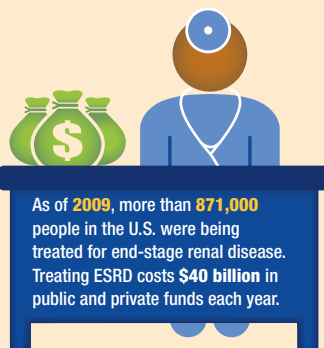


Fast FACTS About Kidney Disease

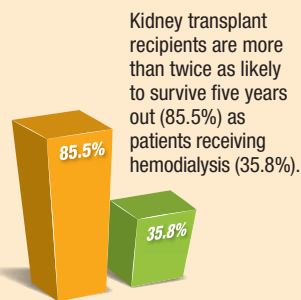
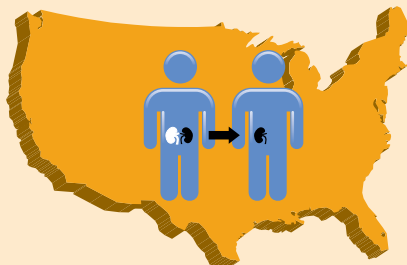


In addition to donor age, size, and time on the waiting list, typical medical factors considered in matching a kidney with a recipient are blood type; the number of Human Leukocyte Antigen (HLA) markers shared; and the presence of lymphocytotoxic crossmatch, or antibodies in the recipient that react with donor HLA.

About 97,000 of the 119,000 candidates currently on a U.S. transplant waiting list desire a kidney (some may be waiting for other organs as well).



Kidney transplants are the most common type of organ transplant. Since 1988, nearly 340,000 kidney transplants have taken place in the U.S.



In a typical year, between 16,000 and 17,000 kidney transplants are performed in the U.S. and an estimated 76,000 worldwide. More than one-third of these transplants in the U.S. (and 42.5% globally) are from living donors, such as family members or even strangers.

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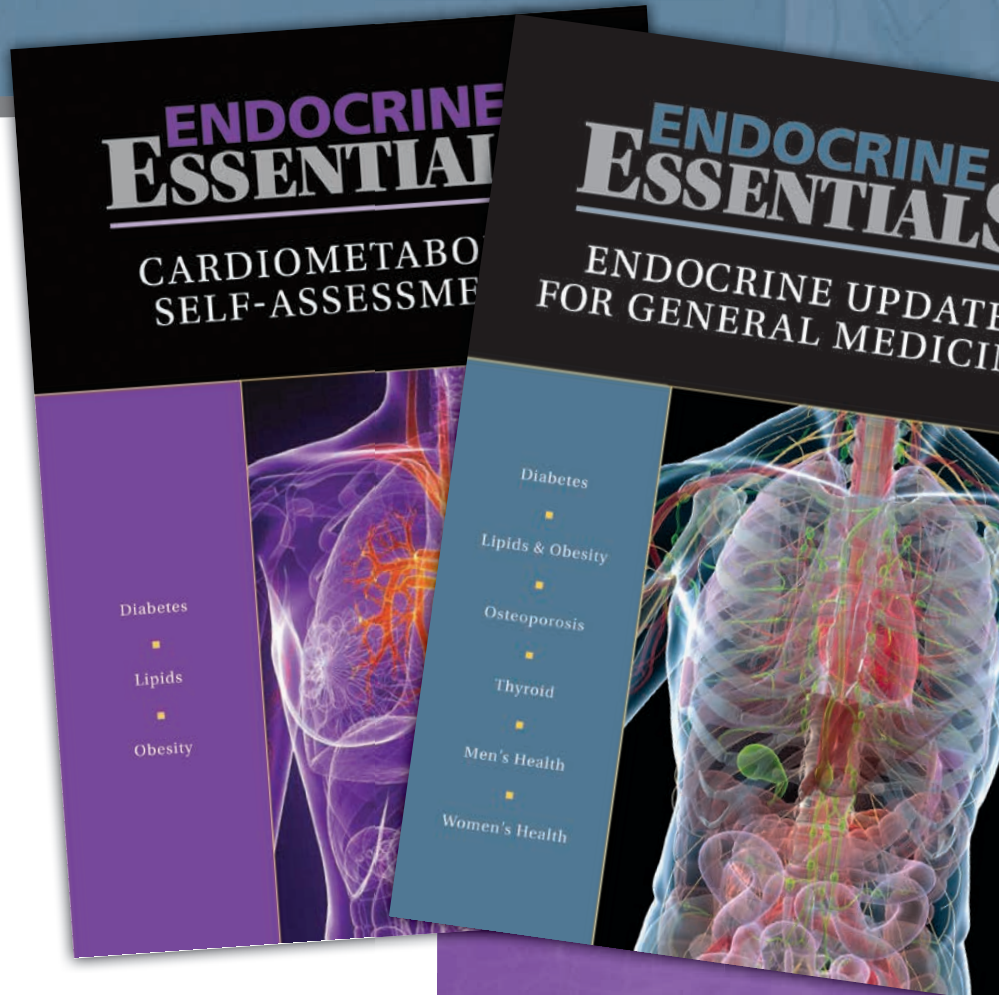
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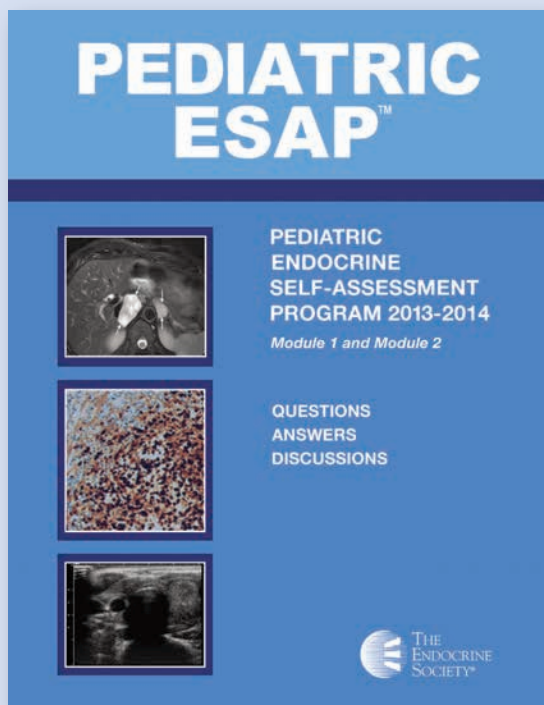
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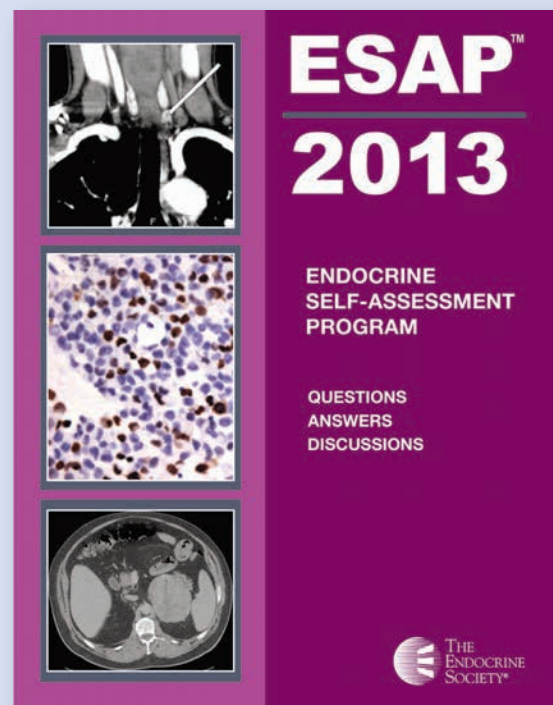
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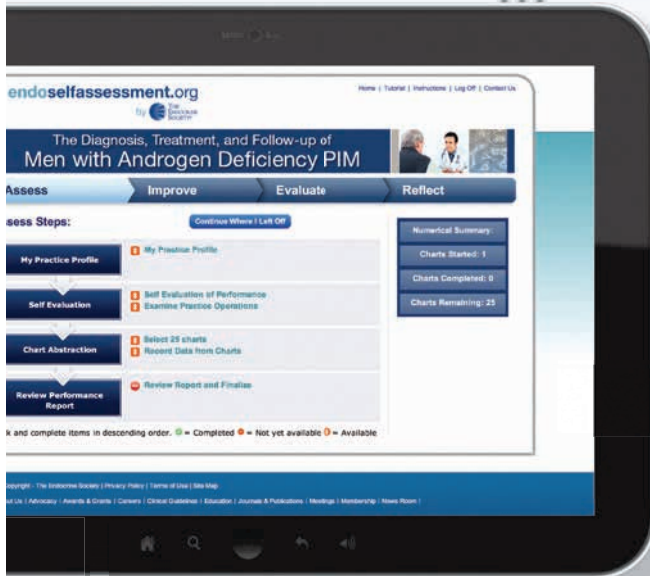
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Meet Barbara Byrd Keenan, The Endocrine Society's New CEO

By Mark A. Newman

In the wake of Scott Hunt's retirement after a quarter century at the helm of The Endocrine Society, Barbara Byrd Keenan has been named the new CEO.

Keenan was chosen after an exhaustive, months-long search which included interviewing the top talent from the association management arena. Keenan brings more than two decades of impressive association management and leadership, with particular expertise in development, marketing, positioning, and partnerships — all qualities that will help the Society accelerate its growth and impact.

Her experience and vision make her an ideal fit with the strategic plan of The Endocrine Society, according to Society president Teresa K. Woodruff, PhD. "The Endocrine Society is at a pivot point between our legacy and our future," said Woodruff. "As we approach the start of our second century, Ms. Keenan will be instrumental in helping the Society capitalize on its many strengths and continue moving forward."

Keenan comes to the Society from the Chicago-based Institute of Food Technologists where she is currently that organization's executive vice president. She says she was intrigued by the vital connection between nutrition and health, something that has been of considerable focus for endocrinologists as well as food technolo-

gists. "Like The Endocrine Society, IFT is also an interdisciplinary audience both of which concentrate on advancing the health and nutrition of people around the world," she explains.

"The genuine success of an organization is when we make a real impact, not just on the lives of our members but on the lives of those individuals our members are dedicated to serving, as well as to society at large," she continues. "And that is a real parallel to The Endocrine Society, not just for members but what endocrinologists will do to support health and wellness in the world population."

Keenan's philosophy regarding association management is that both the volunteer members and the headquarters staff should work as one to maintain a consistent strategic vision. "In any association there's never a lack of potential initiatives, services, and projects that can be done," she explains. "The challenge is to get the one or two ideas that can truly make a positive impact on the organization as well as its members." She added that at past IFT functions, the staff and the members work so closely together that it was difficult to tell them apart, a fact that gives Keenan great pride and humility.

In Keenan's opinion, the effort put forth by the volunteer members is definitely a two-way street. "We want to make sure that if you're a volunteer leader that you feel that when you contribute to the organization, that the organization has helped you in some way," she explains. "I love it when members credit the organization for the accolades they get in their professional life. The core belief of association management is we do for others."

Keenan came to IFT in 2003 from the Community Associations Institute (CAI) in Alexandria, Va., where

she served as CEO. During her tenure, CAI blossomed from an ailing, bankrupt entity to a financially healthy, well respected organization that received several awards for its education programs, publications, marketing, and legislative affairs.

The Short List: Keenan's Accomplishments

- Served on the board of directors for the American Society of Association Executives, including two terms on the executive committee as vice chairman and secretary/treasurer.
- Charter Fellow of ASAE in recognition of professional accomplishments and leadership
- Chaired ASAE's 10th Anniversary Management Conference in 1992
- Led ASAE's Associations Advance America Committee (1994-1995)
- Received a 1996 ASAE Key Award, the highest honor bestowed on an association executive.
- Founding Chairman of the Board of the Travis County Adult Literacy Council and was named TCALC Chairman Emeritus.
- 1992 Excellence in Education Award from the Greater Washington Society of Association Executives
- 2001-2002 Chair of GWSAE
- Serves on the Committee of 100 of the U.S. Chamber of Commerce

"Endocrinologists are on the forefront of medicine and are addressing some of the most pressing health concerns of our day," Keenan noted. "I'm excited to join the Society's work and become part of its amazing team."

Keenan's skills and vision will be a catalyst for the Society's expanding agenda, which includes strategic partnerships to advance the field and facilitate research breakthroughs. She will assume her new role as CEO on Jan. 6.

Staying **THE** **COURSE**

The evidence is clear: Not taking immune-suppressing meds as prescribed threatens transplanted kidneys. So why do so many patients stray?

By Aalok Mehta

For those with advanced kidney disease, the treatment of choice is obvious: Recipients of kidney transplants have a higher quality of life, live longer, and cost less to treat than those on dialysis. Evidence is mounting, however, that transplantees could do even better, if patients would more often take their immunosuppressant drugs exactly as prescribed — and U.S.

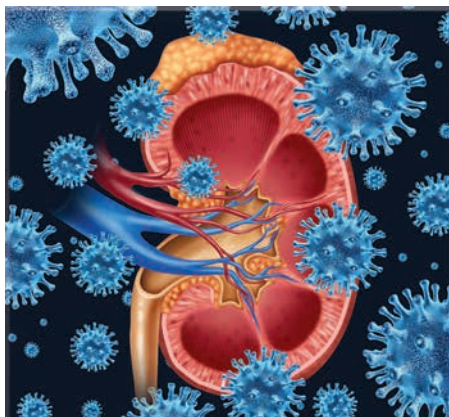
policymakers fix a loophole that abruptly cuts off insurance coverage for anti-rejection medications.

“We’re concerned that a significant percentage of [failed kidney transplants] might be getting into trouble because of poor adherence to immunosuppressant drugs,” says Philip Halloran, a professor in the Departments of Medicine and Medical Microbiology & Immunology at the University of Alberta. Surveys of kidney recipients suggest roughly a quarter stray from the prescribed regimens even though they are much less intensive than the 12 or more hours of weekly treatment needed with dialysis.

The consequence of non-adherence can be severe. In a recent study, Halloran and his colleagues found that nearly half of late-stage kidney rejections were associated with patients who physicians suspected were non-adherent. Other recent work has found that less compliant patients face a 40% to 60% increased chance of graft failure and incur more than \$12,000 in extra medical costs over three years. That jibes with earlier work that showed a 14-fold increase in the risk of acute rejection and a four-fold increased risk of graft failure five years after transplant.

Patients who lose their transplanted kidney must return to dialysis treatment or receive a second transplant, but they suffer from a double disadvantage: They do worse on dialysis than patients who have never received a transplant, with a quarter dying within two years, and they are more difficult to find organ matches for because the first transplant hypersensitizes their immune system.

The extent of the issue “is partly [the medical community’s] fault,” says Halloran, also director of the Alberta Transplant Applied Genomics Centre. “Asking patients to



Surveys of kidney recipients suggest roughly a quarter stray from the prescribed regimens even though they are much less intensive than the 12 or more hours of weekly treatment needed with dialysis.

take drugs twice a day forever — it’s setup for failure. Patients are going to have a degree of noncompliance. We need to do better, to think about different ways to deliver drugs. This is largely a behavioral issue, and we need to address ourselves to modifying that behavior.”

Medicare reimbursement policy exacerbates the problem. Currently, Medicare covers long-term

immunosuppressant therapy only for people 65 years or older or who have work-related disabilities. The remainder receive support for only three years following their transplants, leading many to abandon their drug treatments for financial reasons. Dialysis, however, is always covered, despite costing nearly three times as much annually. “This is a situation that clinicians, patients, and politicians cannot allow to persist,” Halloran says.

A Lifetime of Medication

Each preventable kidney transplant failure carries a high price. Nearly 100,000 people are on the U.S. transplant wait list with end-stage renal disease, an irreversible condition in which the kidneys lose their ability to filter blood. But only 16,000 to 17,000 kidney transplants take place each year, according to the Organ Procurement and Transplantation Network, which tracks organ transplant data. The remainder have to settle for the second-best solution: hemodialysis.

Not only do such patients need to visit a dialysis clinic thrice weekly for four to five hours each time, but they also tend to die sooner. “Life expectancy on dialysis is much worse, primarily due to cardiovascular disease,” says Thomas C. Pearson, a professor of surgery at Emory University School of Medicine and director of the Kidney Transplant Program at Emory University Hospital. “Although dialysis is life-sustaining, it doesn’t do as well as a functioning kidney in maintaining homeostasis.”

Although not as time-intensive as dialysis, keeping up with a post-transplant medical regimen comes with its own burdens. In addition to powerful immunosuppressant

AT-A-GLANCE:

- A significant portion of kidney transplants fail because patients don’t take their meds.
- Medicare coverage of immunosuppressant drugs ends after three years, making the problem worse.
- Discovering new methods to increase patient compliance could improve many areas of medicine.

drugs given after surgery to prevent immediate rejection, patients take several “maintenance” anti-rejection drugs for life. The most common combination is tacrolimus, which blocks T-cell activity, and mycophenolate, an inhibitor of immune cell division, taken twice daily, along with a once-a-day dose of the steroid prednisone.

Tacrolimus has “a narrow therapeutic window,” Pearson says, necessitating regular blood monitoring. A standard schedule might be twice-weekly blood tests for the first month following a transplant, tapering down to once-a-month check-ups. Adding to the complexity of home care, patients often are put on low-fat diets and might be prescribed a host of other medications — including antivirals, antibacterials, stomach-acid reducers, cholesterol-lowering drugs, and nutritional supplements — to help deal with side effects.

Questions and Answers

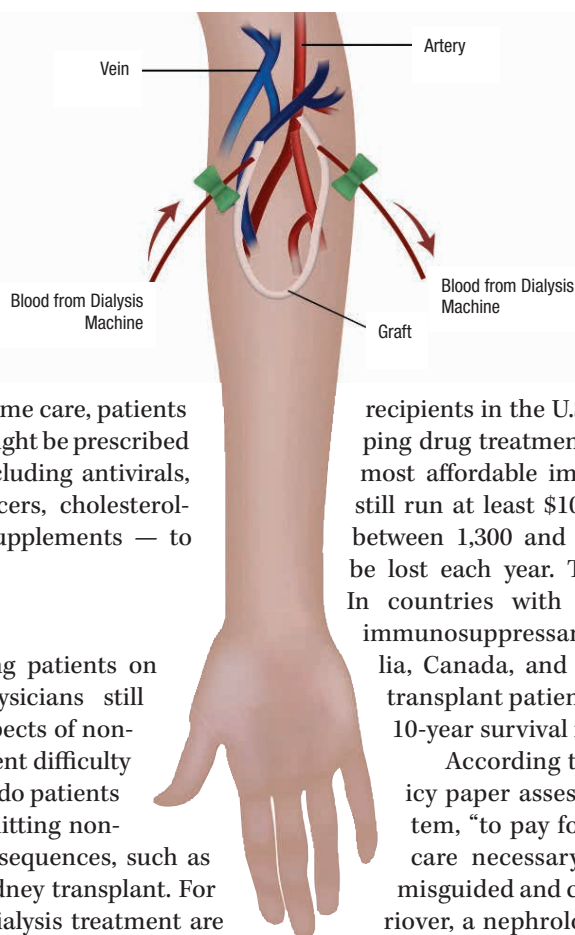
Despite the importance of keeping patients on these medications, however, physicians still remain in the dark about many aspects of non-adherence. Part of that is the inherent difficulty of collecting reliable data. Not only do patients have social reasons to lie, but admitting non-compliance can have medical consequences, such as reducing eligibility for a second kidney transplant. For example, attendance records for dialysis treatment are often a screening factor for transplant eligibility. “Surgery is the tip of the iceberg,” Pearson says. “It’s just a beginning. If a patient is not capable of maintaining the needed regimen, then we delay or defer on a transplant.”

For these reasons, clinicians will oftentimes rely on their experience to identify suspected non-adherent patients, Halloran says. More objective methods range from counting pills and tracking prescription refills to using electronic sensors to detect when a pill bottle is opened, but none can reliably check that the patient is actually taking medication at the right dose. Even blood or urine testing can be misleading, since patients will often improve adherence right before a clinical visit. Thus, although numerous studies suggest that between 20% and 30% of patients don’t take their medications as prescribed, questions remain about the true rate of non-adherence.

Still, scientists have identified several patterns in kidney

“Life expectancy on dialysis is much worse, primarily due to cardiovascular disease. Although dialysis is life-sustaining, it doesn’t do as well as a functioning kidney in maintaining homeostasis.”

— Thomas C. Pearson, director, Kidney Transplant Program, Emory University Hospital



transplants and other diseases requiring long-term treatment. For example, younger patients, men, and non-U.S. residents, along with those who have poor social support systems, poor knowledge about the disease, and a lackluster patient-physician relationship, tend to do worse. Patients with diabetes and those with simpler drug regimens fare better. Almost everyone declines over time.

One clear predictor, however, is financial wherewithal, particularly insurance. By one estimate, more than 40,000 kidney

recipients in the U.S. are currently at risk of stopping drug treatment because of cost, as even the most affordable immunosuppressant treatments still run at least \$10,000 yearly. This would cause between 1,300 and 1,500 transplanted organs to be lost each year. The consequences are severe: In countries with lifetime government-funded immunosuppressant coverage, such as Australia, Canada, and the United Kingdom, kidney transplant patients have much higher five- and 10-year survival rates than in the U.S.

According to the authors of a recent policy paper assessing the state of the U.S. system, “to pay for the transplants but not the care necessary to ensure their survival is misguided and counterproductive.” Bekir Tanriover, a nephrologist at the Columbia University College of Physicians and Surgeons and lead author of the paper, says that several recent attempts to change the policy, including a provision in the Affordable Care Act, have failed to pass Congress despite evidence showing that the government will ultimately save money. “If you’re not eligible for Medicare, you’re on your own,” he says. But “we have to continue to support these people. [Covering immunosuppressant drugs] gives hope for the long term, and quality of life will be better. It’s our ethical responsibility.”

But non-adherence runs much deeper than just a matter of access to drugs. Researchers have found that non-adherence appears early — within 90 days of a transplant. Moreover, while everyone’s compliance tends to ebb as time passes, people tend to decline in lockstep, so that those who do worse at the beginning are likely to continue the pattern. Nor is education a panacea, with doctors and nurses also slipping up

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but “we have to continue to support these people. [Covering immunosuppressant drugs] gives hope for the long term, and quality of life will be better. It’s our ethical responsibility.”

— Bekir Tanriover, nephrologist, Columbia University College of Physicians and Surgeons

Common Anti-Rejection Medications

Kidney transplant recipients typically take powerful immunosuppressant medications, such as basiliximab (Simulect), during and following surgery to prevent immediate rejection. They must then take further immunosuppressant medications for life. Common maintenance medications include the following:

Name (Brand Names)	Mechanism	Dosage
Tacrolimus (Prograf)	T-cell inhibitor (via calcineurin/IL2 inhibition)	Capsule twice a day
Cyclosporine (Gengraf, Neoral, Sandimmune)	T-cell inhibitor (via calcineurin/IL2 inhibition)	Capsule or liquid once or twice a day
Belatacept (Nulojix)	T-cell costimulation inhibitor	IV injection once a month
Mycophenolate (CellCept, Myfortic)	Immune cell division inhibitor	Capsule, tablet, or liquid twice a day
Azathioprine (Azasan, Imuran)	Immune cell division inhibitor	Tablet once or twice a day
Prednisone or Methylprednisone	Reduction of inflammation and immune activity	Tablet or solution once or more a day

The most common treatment is a combination of tacrolimus, mycophenolate, and prednisone. Thymoglobulin or other medications may be used on a temporary basis to treat acute rejection episodes.

Kidney transplant recipients typically follow a restricted or low-fat diet and often take supplemental antiviral, antibacterial, stomach-acid reducing, or cholesterol-lowering to treat the side effects of anti-rejection medications or other complications. Magnesium, potassium, or other supplements may also be prescribed.

Sources: National Kidney Foundation; Emory Healthcare Kidney Transplant Program; U.S. National Library of Medicine, National Institutes of Health



at high rates. “Part of solving this issue is admitting we’re part of the problem,” Halloran says. “Health care professionals probably don’t do much better than anyone else [when asked to take medication].”

Small Steps

So what can be done to help patients stick to prescribed treatments? A simpler regimen is one option. Belatacept, an immunosuppressant approved by the FDA in 2011, is administered intravenously once a month and offers similar or better outcomes to using tacrolimus, Pearson says. However, uptake has been slow due to cost, and it’s still too early to tell to what extent it might improve patient adherence, he adds. Other extended-release formulations, such as a once-daily version of tacrolimus, are also being assessed. Alternate options include better screening for high-risk patients; more stringent guidelines on how well patients must do with dialysis before being approved for a transplant; improved education about the importance of

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If a patient is not capable of maintaining the needed regimen, then we delay or defer on a transplant.”

— Thomas C. Pearson, director, Kidney Transplant Program, Emory University Hospital

drugs; repetitive teaching techniques; schedules, calendars, pillboxes, and other mnemonic devices to aid memory; and more open-ended discussions with patients to facilitate discussion about drug adherence issues.

Ultimately, however, more research is needed into the underlying psychology of non-adherence and better methods for directly dealing with the resulting behavior, Halloran says. More interdepartmental collaboration is key, he adds, with the upshot that any new findings may dramatically improve many medical disciplines simultaneously. “In general, noncompliance is the elephant in the room, in many areas of medicine, that is seldom discussed,” he says. “It’s been very understudied in relation to its importance.

“It’s one aspect of a larger behavioral problem: How you get people to do things that are good for them and stop doing things that are bad for them, like smoking?” **EN**

— Mehta is a freelance writer based in Cambridge, Mass.

POTLUCK

Is marijuana the latest treatment for diabetes and obesity?

By Melissa Mapes

Until 1936, marijuana was freely bought and sold in the U.S. as a pharmaceutical and recreational drug. Then a switch flipped.

Accounts of negative effects and ties between the cannabis industry and violent crime spurred the U.S. government to levy an enormous tax on the product in an attempt to stifle its spread.

Rather than diminishing, marijuana became a black market drug and remains one of the largest illegal imports in America. But the story of cannabis in the U.S. has taken a turn — states continue to legalize the drug for medicinal purposes, and scientists are uncovering powerful healing compounds within the plant that were until now thought inactive.

The Myth of the Munchies

Marijuana appears to have the ability to help regulate blood sugar and stifle weight gain, which is surprising when one considers the infamous “munchies.” The finding that frequent tokers do not necessarily pack on pounds came as a shock to researchers, considering the bags of Cheetos and hours of video games that the stereotypical “pothead” consumes.

Two years ago, Yann Le Strat, MD, PhD, a psychiatrist at Louis-Mourier Hospital in Colombes, France, and author of a study in the *American Journal of Epidemiology*, had intended to prove a completely different hypothesis. “We initially thought that the correlation between cannabis use and obesity would be positive. We actually found the opposite: The more people smoke cannabis, the less the prevalence of obesity.”

He and his fellow researchers made sure to replicate the results in an independent sample before publishing their work.

The consistent findings of slimmer marijuana users led other experts to start asking questions. At Harvard Medical School, associate professor Murray Mittleman, DPh, MD, decided to test the effects of cannabinoids on metabolism. Similar to Le Strat, the results were astounding: Current

and they appeared to be less resistant to the insulin produced by their body to maintain a normal blood-sugar level.” The study also confirmed Le Strat’s finding of lower BMI, and additionally demonstrated smaller waist circumference and higher levels of HDL-C. Both projects adjusted for age and other factors to minimize spurious influences.

Mittleman and Le Strat’s studies cannot explain the exact reasons for lower rates of obesity and blood sugar among cannabis cohorts, but some experts think that pot and perhaps concentrated cannabinoids have the potential to treat such diseases. Of course, possible side effects and regulatory issues will need to be resolved before Mary Jane hits the pharmacy.



“We initially thought that the correlation between cannabis use and obesity would be positive. We actually found the opposite: **The more people smoke cannabis, the less the prevalence of obesity.**”

— Yann Le Strat, MD, PhD,
a psychiatrist at Louis-Mourier
Hospital in Colombes, France,
and author of a study in the
American Journal of Epidemiology

users showed fasting glucose levels 16% lower than non-users. “The most important finding is that current users of marijuana appeared to have better carbohydrate metabolism than nonusers,” Mittleman told *TIME Magazine*. “Their fasting insulin levels were lower,

Risky Business

Medicinal marijuana may only be obtained by those with qualifying illnesses and conditions, such as AIDS, via authorized dispensaries in 19 states plus the District of Columbia. Non-medicinal users rely on street dealers, which fuels a shadow economy with sweeping ties to all kinds of crime and substance abuse. Pot remains entirely illegal under federal law — even for medicinal purposes — and possession for personal use may theoretically result in up to one year behind bars and a \$100,000 fine for a first offense. The law goes back to the Controlled Substances Act (CSA) of 1970, and the government could choose to enforce it at any time, but currently is allowing state laws to prevail. The legal purgatory surrounding cannabis could make it tricky to bring it to market as a treatment for diabetes and obesity.

AT-A-GLANCE:

- Marijuana appears to have the ability help regulate blood sugar and stifle weight gain, which is surprising when one considers the infamous “munchies.”
- Many experts still oppose the use of medicinal marijuana, particularly in its raw plant form.
- CBD does not cause the “stoned” feeling other cannabinoids like tetrahydrocannabinol (THC) and may in fact counteract such effects.

Many experts still oppose the use of medicinal marijuana, particularly in its raw plant form. Le Strat cautions against the adoption of his and other studies as an advertisement for marijuana legalization. As a psychiatrist, he claims to see patients struggling with cannabis dependence daily, some of whom began using it as a medicinal treatment. “While the benefits of cannabis use are of scientific interest, the negative effects seriously temper the enthusiasm of professionals in the field,” he explains. “Cannabis use is associated not only with an increased risk of developing psychotic symptoms or schizophrenia, but also with many medical conditions, like arteritis.” He went on to cite a famous French study from 2005 that demonstrated a four-fold increase in fatal car crashes when marijuana was involved.

The intersection of palliative effects and potentially serious side effects creates a conundrum for physicians, patients, and lawmakers alike. For each, the risks and benefits are in tight competition. The political implications of the drug remain controversial, but an undeniable demand for legalization continues to grow. Advocacy groups like the National Organization for the Reform of Marijuana Laws (NORML) — founded in the same year as the CSA — lobby state and federal legislators on behalf of “responsible marijuana smokers” to end the arrest and imprisonment of users. But, these same citizens fuel a dangerous drug trade across the border of Mexico and the U.S. A physician may see potential for marijuana to help a patient, but then risks dependency or other psychiatric effects. Patients without a prescription are at risk both physically and legally if they

consume the unregulated version, but their disease may not be on the list of approved uses.

Divide & Conquer

One compromise may be to distill the compounds of marijuana that lead to better weight management, lower blood sugar, and other positive effects into a medication void of the psychiatric concerns. A group called Project CBD works to publicize such findings. The nonprofit claims that cannabidiol (CBD), a compound found in cannabis, has been shown in scientific and clinical studies to ease the symptoms of a wide range of conditions, such as: rheumatoid arthritis, diabetes, alcoholism, PTSD, epilepsy, antibiotic-resistant infections, and neurological disorders. CBD does not cause the “stoned” feeling other cannabinoids like tetrahydrocannabinol (THC) and may in fact counteract such effects.

A recent critical review in the journal *Current Pharmaceutical Design* investigated 30 years of research on CBD, which is the second largest compound in the cannabis plant after THC, and confirmed claims related to anti-psychotic effects ranging as far as schizophrenia. Studies show that different strains of cannabis contain varying levels of CBD, and those strains with higher levels may be safer to use. Strains with lower amounts of CBD, such as “skunk weed” may be more likely to induce negative psychotic outcomes.

CBD has also been found to work as an immunosuppressant and to inhibit the growth of some cancer cells. At the California Pacific Medical Center, scientists discovered that the compound is able to switch off the DNA that causes breast cancer

to metastasize. Human trials are currently underway, but the way CBD works is not well understood. Similarly, studies have proven CBD lowers the incidence of diabetes in mice and reduces weight gain in rats. “If this plant were discovered in the Amazon today, scientists would be falling all over each other to be the first to bring it to market,” said Donald Abrams, MD, chief of oncology at the University of California San Francisco to *NBC News*. For a plant compound that was once considered inert, CBD shows great promise for treating endocrine disorders and beyond.

Still, no one understands the mechanism within CBD that causes these many positive outcomes. Le Strat believes that further study into the metabolic effects of marijuana and its compounds is worthwhile, but no one should get too excited yet. The possibilities of the plant as a treatment for diabetes and obesity will require much more research. “The negative impact of cannabis is well demonstrated and may be devastating for users and their families. At this time, I would not recommend the use of smoked cannabis for medical purpose,” Le Strat explains. He is careful not to rule out plant derivatives for future use.

The irony of marijuana as both an appetite stimulant and weight and blood sugar suppressant sounds impossible, but despite being used as a medicinal treatment for over 2,000 years, cannabis still seems to contain a few surprising secrets. Hopefully, future treatments derived from the plant will trade side effects and legal concerns for cures — minus the smoke. **EN**

— Mapes is a freelance writer in Washington, D.C., and a regular contributor to Endocrine News.

HAPPY Together

Shared medical appointments are gaining acceptance among patients and doctors alike and could be a unique solution for diabetes care.

By Kurt Ullman

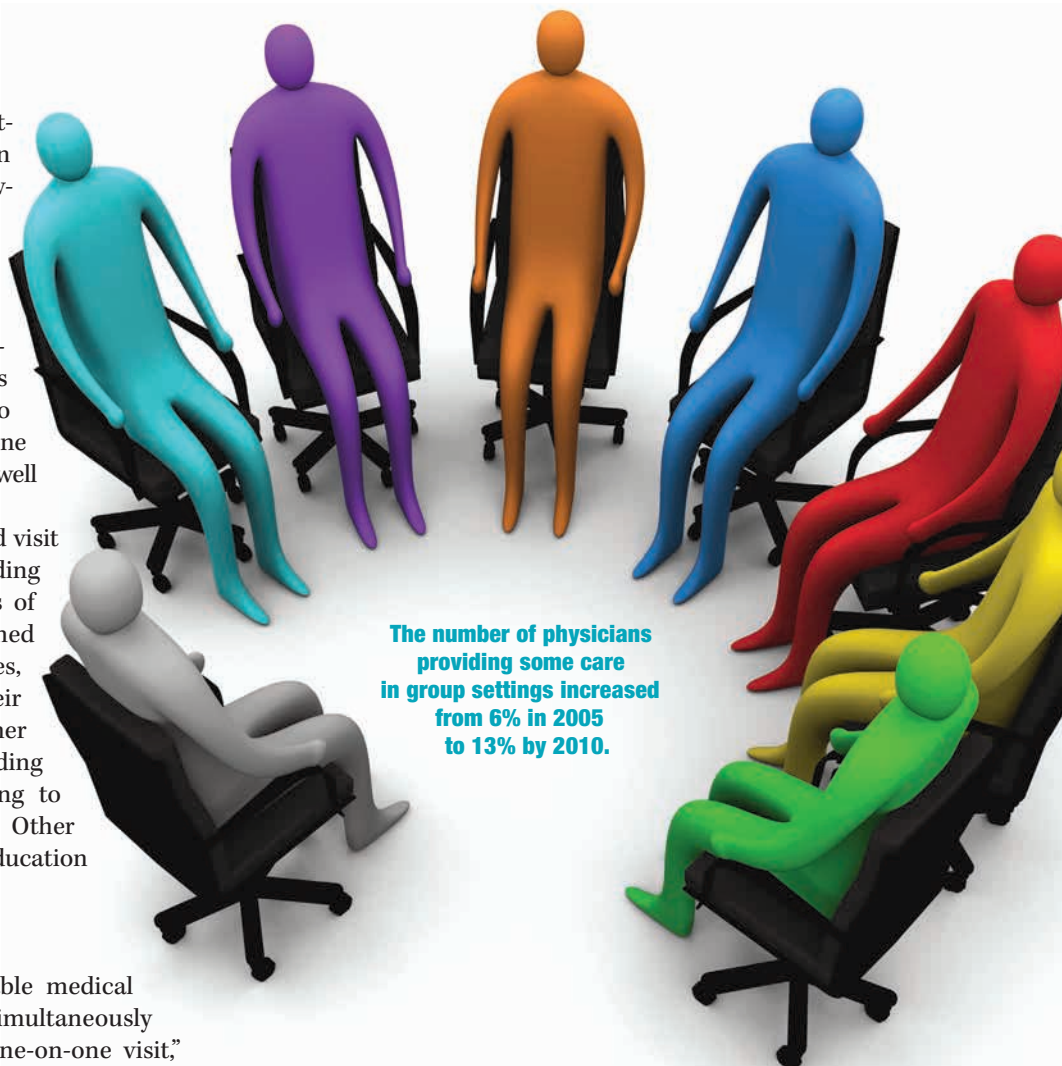
Shared medical appointments (SMAs), also known as “group visits,” are a growing point of care for some chronic illnesses. A study by the American Academy of Family Physicians shows the number of physicians providing some care in group settings increased from 6% in 2005 to 13% by 2010. Diabetes is one of the diseases that works well within this model.

The structure of a shared visit takes many forms, depending on the needs and resources of a practice. Some do combined visits with group activities, and patients also seeing their physician privately. Another model has providers leading the appointment and talking to patients within the group. Other practices may decide to do education outside of a regular visit.

SMA Defined

“We define SMA as a billable medical visit with multiple patients simultaneously instead of the traditional one-on-one visit,” says Marshall Fleurant, MD, MPH, assistant professor of medicine at the Boston Medical Center. “These are time-limited adjuncts to single patient visits. Afterwards, the patient may go back to traditional appointments with a better understanding of self-managing their disease.”

In Boston, patients are seen for 120 minutes. The first half is educational, discussing different aspects of diabetes from medication effects, to the importance of diet, to the ins and outs of diabetic eye care. “This is structured like a seminar series,” says Fleurant. “Patients come in every three or four weeks for a series of visits, and we talk about specific parts of diabetes education.”



The number of physicians providing some care in group settings increased from 6% in 2005 to 13% by 2010.

During the last 45 minutes or so, a facilitator conducts a question and answer period while Fleurant sees each patient individually, focusing on a particular aspect of their diabetes. This allows time for the patients to get general self-management information together, while also making sure that patient-specific issues are addressed. “We look at trends in laboratory results, medication changes, coordination with specialists, and the need for eye and foot exams,” he says. “I take the person to an exam room and focus on medical management issues.”

Different Models

Another model is being used at the Cleveland Clinic. They, too, have an education section, but the physician talks about individual concerns within the group setting. During the 90 minutes, each patient has their progress reviewed and discussed. There is

also a diabetes educator involved to lead general discussions.

“For example, I’ll have a copy of their test results to give them,” says Melissa Li-Ng, MD, staff physician in endocrinology at the Cleveland Clinic in Cleveland, Ohio. “If their blood sugar control has improved, that is reinforced positively, and I ask them what they are doing differently. If it has worsened, we talk about that, too. Both the group and the individual have opportunities to learn.”

The Coal Country Community Health Centers (CCCHC) in rural Beulah, N.D., uses a third model. In this instance, monthly meetings are scheduled with most of the emphasis on education. Physicians or other healthcare providers are present for the first 30 minutes to provide detailed education and instruction. However, they do not provide individual patient care.

These sessions usually meet in a CCCHC conference room. A diabetes educator or other facilitator is brought in to discuss an aspect of diabetes self-management with the group. Following the program, there is usually a 15-30 minute general discussion with peer-to-peer interaction.

“We are trying to get our patients more involved in their own care,” says Chastity L. Dolbec, RN, BSN, clinical quality care director at the CCCHC. “We try to find innovative ways to tackle diabetes issues. For instance, we brought in a local butcher to discuss healthy cuts of meat that did not have to include only the most expensive ones.”

Although there are many reasons for a practice to consider starting SMAs, necessity is often the main driver. Growth in the number of diabetes patients, combined with stagnating, or even declining, numbers of providers to see them, means new and more efficient models must be considered to provide adequate care.

So Many Patients, So Little Time

“Shared appointments are one way to put a large volume of patients into a smaller amount of time,” notes Li-Ng. “We started our project when I realized I had no available appointments for new patients and the waiting time to see me was around six months.”

She notes that in half a day she can see 10 patients individually for around 20 minutes each. Since starting an SMA program, she can see eight of those in 90

“One of our big focuses is on how to increase a patient’s self-management skills using the community health center model.

This is a good way to give them the tools and resources to use on their own in managing their diabetes.”

— Thomas Aaron Garman, MD, medical director, Coal Country Community Health Centers

lot about their patients by what they share during the visit.

“From my standpoint, it is very satisfying to get to know your patients better as a person,” says Fleurant. “As they get more comfortable, they bring up questions and comments that they might not have otherwise. I think patients develop more of a connection with the provider and vice versa.”

Peer Support and Pressure

Another plus for the patient is that group settings exert both peer support and pressure. This helps provide motivation for staying compliant with treatment regimens as well as sharing information.

“I have patients whom I have been trying to get on insulin, but resist because of fear or misconceptions about insulin,” says Li-Ng. “They come to the SMA, see that half of their peers are taking insulin and find out first-hand from others that they can be better controlled and do quite well.”

Depending on the structure of the SMA, it is possible to extend teaching to families of patients. Those close to the patient can get additional insights into how difficult diabetes can be. Li-Ng notes that can be eye opening to the family with a clear benefit to the patient.

Variables to be considered

When looking at instituting a SMA, there are many variables that need to be addressed. Among the more important is how to get paid.

“It is imperative the billing department gets involved early to see if this is an economically viable option,” says Fleurant. “We bill as an established visit. Documenting the visit is something else you need to work on in close consultation with your billing people.”

Consider for whom you will be claiming payment. The Ohio group, for example, bills only for the physician’s visit. They feel that including a diabetes educator is too much trouble from an administrative standpoint. Also, since many payers limit the amount of time this type of professional can bill yearly, practices may want to keep that option available for more structured individual therapy.

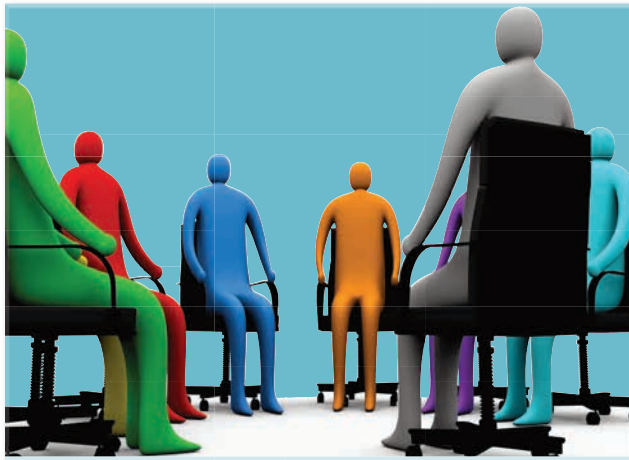
Another variable is the physical structure of the clinic. The size and environment play



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— Melissa Li-Ng, MD, staff physician in endocrinology, Cleveland Clinic



Available Information About SMA

The **Patient Centered Medical Home** website has a wealth of information on starting and continuing shared medical appointments (SMA). It includes a suggested waiver and other forms as well as links to additional websites with specific information. www.thepcmh.org/group_visits

The **Family Medicine Digital Resource Library** includes an entire curriculum for SMAs. Among the available information is what it calls the “Starter Kit for Group Medical Visits.” There are areas that focus specifically on setting up diabetes groups. www.fmdrl.org/group/index.cfm?event=c.showWikiHome&wikid=15

The **Veteran’s Administration (VA)** instituted SMAs as early as 2008. This website includes its large (68-page) “how to” manual. It covers everything from engaging stakeholders early in the process to suggestions for handling challenging patients, to when and how to send out reminders. It includes lots of checklists and timelines. www.queri.research.va.gov/tools/diabetes/shared-med-appt.pdf

A more recent systematic review of shared visits in chronic illnesses from the **VA** on shared visits can be seen at: www.hsrd.research.va.gov/publications/esp/shared-med-appt.cfm#_UeQgBRajHOA

Dartmouth’s Clinical Microsystems division also offers a toolkit for SMAs. In addition to suggestions for setting up shared appointments, this website also has links to many outside areas with more information and background. clinicalmicrosystem.org/toolkits/shared_medical_appointments/

important roles in how many people you can comfortably fit into a shared appointment. The availability of support items such as audio-visual equipment, electronic health record terminals, and even restrooms go into a successful program.

Some needs in this area will be dictated by how you organize the SMA. In Boston Medical Center’s case, its desire to have one-on-one interactions in a more private setting meant examination rooms had to be close by. For the Cleveland Clinic, this wasn’t a consideration.

And don’t forget that there will be other personnel resources to commit.

“You have to have a physician or a nurse practitioner to facilitate if you are going to bill,” says Li-Ng. “There usually will be some preparation time for my nurse to get notes and lab results ready prior to the SMA. Someone at the front desk

will be tasked with checking people in and getting copays so the desk doesn’t get swamped by SMA patients or impede the patient flow of my colleagues. Those working on the shared appointments should have no other duties during this time.”

Starter Kits

Utilize available resources in both early stages and throughout the life of the program. There are a number of “starter kits” available on the Internet (see sidebar, left) and elsewhere. There may also be other practices in the community or area that have utilized the SMA and can be a source of information.

Discussing issues with legal experts should be done before instituting this program. Review your practice’s policies and procedures to see if changes need to be made or additional ones written. Privacy issues are among the most likely areas of concern.

“One of the big hang-ups in rural medicine is confidentiality,” says Aaron Garman, MD, medical director at the CCCHC. “We need to be able to make patients comfortable addressing very private healthcare issues in open settings.”

Privacy and Recruitment

Programs interviewed for this article all agreed that it is important for privacy issues to be addressed at the beginning of the appointment. In addition to signing a non-disclosure agreement before each meeting, the providers make announcements to reinforce its importance.

Recruiting patients takes many forms depending on the needs and resources of the practice. Some place flyers in the office or contact their entire patient rosters by telephone. Others go into the community using area newspapers, local cable television channels, and posters in stores.

Not all are candidates for SMAs. Among the screening concerns would be hearing or cognitive impairments, language comprehension, or those likely to be disruptive. It must be stressed that this is voluntary and patients can refuse with no repercussions. Most practices do not invite first-visit patients to the group.

Mixed Reviews

The literature on outcomes is mixed. While some show improvements in measurements such as Hgb A1c, lipids, or annual screenings, others do not. There is no evidence that the outcomes are any worse.

“We have seen significant improvements in many of our diabetes outcomes,” says Dolbec. “In 2012, we received an award for best rural performer for optimal diabetes care in the state of North Dakota. Our Hgb A1c control is better, and more patients are completing their annual eye and foot examinations.”

In addition, all three note that patient satisfaction is improved.

“One of our big focuses is on how to increase a patient’s self-management skills using the community health center model,” says Garman. “This is a good way to give them the tools and resources to use on their own in managing their diabetes.” **EN**

— Ullman, RN, MHA, is an Indiana-based freelance writer with nearly 30 years of experience.



Female Sexual Dysfunction

WHAT IS FEMALE SEXUAL DYSFUNCTION (FSD)?

Many women have a low sex drive or trouble having an orgasm. Some women are not bothered by this, but others are. A woman has female sexual dysfunction, also called FSD, when she is upset or unhappy about her sexual health.

There are several types of sexual dysfunction:

- Low sexual desire
- Trouble becoming aroused
- Trouble having an orgasm
- Pain during sex

A woman might have more than one of these issues, which are often related to each other. Sexual dysfunction can be lifelong or temporary. It can happen all the time, only with a certain partner, or only at certain times, such as after pregnancy.

DID YOU KNOW?

Studies show that about 33 percent of American women have low sex drive. Of those, about one in three women are upset about having low sex drive. That's about 10 percent of all women in the U.S.

A healthy sex life depends on a complex mix of many factors. The same is true for a troubled sex life. Health issues, certain prescription medicines, changes in hormone levels, partner or family issues, and psychological concerns can all contribute to FSD.

CAUSES OF FSD

Physical causes

- Health problems: diabetes, heart disease, cancer, arthritis, multiple sclerosis, or alcohol abuse
- Medicines to treat high blood pressure, depression, pain; oral contraceptives
- Gynecological issues:
 - Medical conditions such as endometriosis, cystitis, pelvic muscle problems, or chronic pelvic pain
 - Pelvic or genital surgeries that cause scarring, decreased blood flow, or nerve damage to the genital area

Hormonal causes

- A drop in estrogen levels from menopause (natural or surgical) or premature ovarian failure (when the ovaries stop working before age 40), which can cause vaginal dryness and painful intercourse
- Possibly, a drop in levels of testosterone, which women produce in small amounts, after removal of the ovaries*

Psychological and emotional causes

- Mental distress: stress, anxiety, depression, eating disorders, past sexual abuse, fear of unwanted pregnancy
- Relationship issues: boredom, anger, power struggles, abuse (physical or emotional)
- Religious or cultural beliefs about sex

* Most research does not show a link between testosterone levels and FSD

WHAT TREATMENTS ARE AVAILABLE FOR FSD?

Choice of treatment depends on the cause of your problems. Often, a combination of treatments works best. If you have a medical condition that is causing your FSD, talk with your doctor about what can be done.

Talking and Counseling

Consider talking with your partner about what's going on. Sometimes a better line of communication is all that is needed. If necessary, you may want to get counseling, by yourself or with your partner. Sex therapy, usually a later step in the process, also can be helpful.

Lifestyle Changes

Some women find that losing weight, eating a healthy diet, exercising, stopping smoking, and getting enough sleep helps increase their sense of well-being and interest in sex.

Try finding ways to be comfortable with your own sexuality. This may involve thinking about your attitudes toward sex when you were growing up, finding ways to improve your self-esteem, and accepting your body as it is.

Medicines

If certain medicines are causing problems, your doctor might be able to change your prescription. Other medicines also can help.

Estrogen

Estrogen can help with vaginal dryness and painful intercourse. Two types of prescription estrogen are available: local (vaginal) and whole-body (systemic).

- Local estrogen comes in very low doses and is inserted into the vagina as a cream or tablet. It also comes in a vaginal ring. Local treatment doesn't have the health risks of whole-body estrogen because only small amounts of estrogen reach the bloodstream.
- Whole-body estrogen, also called hormone therapy, is taken as a pill, skin patch, gel, or spray. Because it affects the whole body, it has some health risks, such as stroke and blood clots. These events are rare in healthy women using hormone therapy close to menopause. Women who have not had a hysterectomy also need to take progesterin, another female hormone, to prevent uterine cancer.

Other Medicines

- Non-prescription treatments, which are hormone-free and have few side effects, can help. They include moisturizers applied to the vagina several times a week or lubricants for the vagina, used just before intercourse.
- Testosterone, when used short-term (a year or two), may increase sex drive in some women. Testosterone products for

women are approved in some countries but not in the U.S. The long-term safety of testosterone for women has not been proven and is being studied.

Devices

A prescription device called the Eros can help with arousal by increasing blood flow to the genital area and enhancing sensation.

Questions to ask your doctor

Keep in mind that some doctors have not been trained to treat sexual problems. Ask your doctor whether he or she feels comfortable working with you on your sexual health. If not, ask whether he/she can recommend an expert who could help you.

Before you ask your health care provider any questions, think about what you'd like to say. Think of ways to speak frankly and plainly, and try to be as specific as possible. You can use one of the statements below and add personal details.

- I am dissatisfied/unhappy/disappointed with my sex life because _____
- There have been changes in my sexual relationship with my partner: _____

Other questions:

- What are my options for treatment?
- Will treatment relieve my symptoms?
- What are the risks and benefits of each treatment option?
- How long will I need treatment?
- Should I see a specialist?

RESOURCES

- Find-an-Endocrinologist: www.hormone.org or call 1-800-HORMONE (1-800-467-6663)
- Hormone Health Network information about menopause and women's health: www.hormone.org/Resources/menopause-and-womens-health.cfm
- North American Menopause Society information about sexual health and menopause: www.menopause.org/for-women/-em-sexual-health-menopause-em-online
- Mayo Clinic information about female sexual dysfunction: www.mayoclinic.com/health/female-sexual-dysfunction/DS00701

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December 2012

The Hormone Health Network offers free, online resources based on the most advanced clinical and scientific knowledge from The Endocrine Society (www.endo-society.org). The Network's goal is to move patients from educated to engaged, from informed to active partners in their health care. This fact sheet is also available in Spanish at www.hormone.org/Spanish.

Female Sexual Dysfunction Fact Sheet



www.hormone.org

If you are interested in submitting classified advertising to *Endocrine News*, please contact Christine Whorton at endocareers@endocrine.org or 800-361-3906.

Washington, DC Endocrinologist:

The Department of Medicine, Division of Endocrinology & Metabolism, at the George Washington University Medical Faculty Associates, an independent non-profit academic clinical practice group affiliated with The George Washington University, is seeking an Endocrinologist at the Assistant or Associate Professor level with a strong interest in clinical practice and teaching students, residents and endocrine fellows. Basic Qualifications: Applicants must be Board certified/eligible in Endocrinology, Diabetes and Metabolism (or in Endocrinology and Metabolism) and be eligible for licensure in the District of Columbia. Applicants must also have an established record of providing excellent clinical care services, research productivity and clinical teaching as demonstrated by experience, publications, evaluations and/or references. Academic rank at The George Washington University will be commensurate with experience. Review of applications will begin on September 15th and will continue until the position is filled. Application Procedure: to be considered, please complete an online faculty application at: <https://www.gwu.jobs/postings/17166> and upload a curriculum vitae and cover letter. The George Washington University Medical Faculty Associates is an Equal Opportunity/Affirmative Action employer.

Washington, DC Diabetologist/Endocrinologist:

The Department of Medicine, Division of Endocrinology & Metabolism, at the George Washington University Medical Faculty Associates, an independent non-profit academic clinical practice group affiliated with The George Washington University, is seeking a Diabetologist/Endocrinologist at the Associate Professor or Professor level with a focus of interest in diabetes and a record of academic accomplishment and leadership skills. Basic Qualifications: Applicants must be Board certified/eligible in Endocrinology, Diabetes and Metabolism (or in Endocrinology and Metabolism) and be eligible for licensure in the District of Columbia. Applicants must also have an established record of providing excellent clinical care services, research productivity including funding, and clinical teaching as demonstrated by experience, publications, evaluations and/or references. Applicants should have a strong, demonstrated interest in clinical and/or translational diabetes research; and the capability to develop a program of original investigation as demonstrated by a record of peer-review publications and research grant support. Academic rank at The George Washington University will be commensurate with experience. Review of applications will begin on September 23rd and will continue until the position is filled. Only complete applications will be considered. Application Procedure: to be considered, please complete an online faculty application at: <http://www.gwu.jobs/postings/17172> and upload a curriculum vitae and cover letter. The George Washington University Medical Faculty Associates is an Equal Opportunity/Affirmative Action employer.

Washington Endocrinologist:

Group Health Physicians, the Pacific Northwest's top-rated multi-specialty group, is currently seeking a BC/BE Endocrinologist to join our Group Practice. Group Health is dedicated to providing comprehensive, innovative, and patient-centered care to our patients. We lead the nation in EMR integration. We are looking for an additional provider to join our Endocrinologists in a stimulating

setting. This provider will help to expand our Endocrinology services in Seattle. The practice is exclusively outpatient consulting Endocrinology without hospital responsibilities. We offer generous benefits, competitive salaries and the ability to become a shareholder in our Group Practice. For additional information regarding this position or to submit your CV, please visit our website at www.grouphealthphysicians.org or contact Cayley Crotty: 206-448-2598; crotty.c@ghc.org.



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COMING IN THE **NOVEMBER**

ENDOCRINE news

- Weighing the risks vs. benefits of testosterone therapy
- Is fructose a behind the obesity epidemic?
- Securing patient privacy when migrating to the “cloud”

Endocrinologist Opportunities

Geisinger Health System (GHS) is seeking Endocrinologists for two locations:

- **Endocrinology at Geisinger Wyoming Valley Medical Center (GWV), Wilkes-Barre, Pa.**
- **The Endocrinology team at Geisinger-Patton Forrest, State College, Pa.**

About the Position at GWV

- Join a team of 3 Endocrinologists, 2 Nurse Practitioners and 3 Certified Diabetes Educators, and is positioned for additional growth
- Work collaboratively with Geisinger's community practice network to enhance diabetes care, as well as to work with multiple subspecialties to enhance inpatient care
- Opportunities for clinical practice include serving as investigator on diabetes clinical trials, US-guided Thyroid Fine Needle Aspiration Biopsies, Continuous Glucose Sensors and Bone Density interpretation
- Engage in clinical mentoring and educational programs for medical students and family medicine residents on the GWV campus, as well as internal medicine residents on rotation at GWV

About the Position at Geisinger-Patton Forrest

- Join a growing endocrinology department in a thriving, multi-specialty group practice, located in a progressive university town
- Provide 100% endocrinology subspecialty outpatient care and inpatient consultations
- Provide consultative care at Mt. Nittany Medical Center, State College, Pa., and Lewistown Hospital, Lewistown, Pa.

Geisinger Health System serves nearly 3 million people in Northeastern and Central Pennsylvania and has been nationally recognized for innovative practices and quality care. A mature electronic health record connects a comprehensive network of 4 hospitals, 43 community practice sites and more than 900 Geisinger primary and specialty care physicians.

Discover for yourself why Geisinger has earned national attention as a visionary model of integrated healthcare. For more information, please visit Join-Geisinger.org or contact: John W. Kennedy, MD, Endocrinology Department Director, Geisinger Health System c/o Kathy Kardisco, Department of Professional Staffing, at 1-800-845-7112 or kkardisco@geisinger.edu.

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The following studies, among others, will be published in Endocrine Society journals. Before print, they are edited and posted online in each journal's Early Release section. You can access the journals at www.endocrine.org.

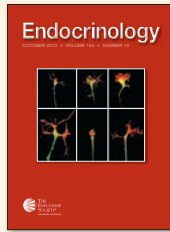


Lifestyle and Metformin Treatment Favorably Influence Lipoprotein Subfraction Distribution in the Diabetes Prevention Program • Ronald Goldberg, Marinella

Temprosa, James Otvos, John Brunzell, Santica Marcovina, Kieren Mather, Richard Arakaki, Karol Watson, Edward Horton, and Elizabeth Barrett-Connor • *Intensive lifestyle change and metformin treatment have favorable effects on lipoprotein subfractions that are primarily mediated by intervention-related changes in insulin resistance, BMI, and adiponectin. Interventions that slow the development of diabetes may also retard the progression of atherosclerosis.*

Circadian Clock Characteristics Are Altered in Human Thyroid Malignant Nodules • Tiphaine Mannic, Patrick Meyer, Frederic Triponez, Marc Pusztaszeri, Gwendal Le Martelot, Olivia Mariani, Daniel Schmitter, Daniel Sage, Jacques Philippe, and Charna Dibner • *Characterization of the thyroid clock machinery alterations upon thyroid nodule malignant transformation contributes to understanding the connections between circadian clocks and oncogenic transformation. Moreover, it might help in improving the thyroid nodule pre-operative diagnostics.*

Trial of Recombinant Follicle Stimulating Hormone (rFSH) Pre-treatment for GnRH-induced Fertility in Patients with Congenital Hypogonadotropic Hypogonadism • Andrew A. Dwyer, Gerasimos P. Sykiotis, Frances J. Hayes, Paul A. Boepple, Hang Lee, Kevin R. Loughlin, Martin Dym, Patrick M. Sluss, William F. Crowley Jr., and Nelly Pitteloud • *rFSH pre-treatment followed by GnRH is successful in inducing testicular growth and fertility in CHH men with prepubertal testes. rFSH not only appears to maximize the SC population, but also induces morphologic changes suggesting broader developmental roles.*



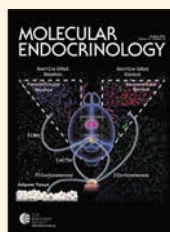
The Heparin-Binding Domains of IGFBP-2 Mediate Its Inhibitory Effect on Preadipocyte Differentiation and Fat Development in Male Mice • Gang Xi, Melissa A. Solum,

Christine Wai, Laura A. Maile, Clifford J. Rosen, and David R. Clemmons • *The HBD2 domain of IGFBP-2 is the primary region that accounts for its ability to inhibit adipogenesis and that a peptide encompassing this region has activity that is comparable with native IGFBP-2.*

Human Resistin in Chemotherapy-Induced Heart Failure in Humanized Male Mice and in Women treated for Breast Cancer • Daniel R. Schwartz,

Erika R. Briggs, Mohammed Qatani, Heloisa Sawaya, Igal A. Sebag, Michael H. Picard, Marielle Scherrer-Crosbie, and Mitchell A. Lazar • *Elevated resistin is a biomarker of anthracycline-induced cardiotoxicity and may contribute in the development of heart failure via its direct effects on macrophages. These results further implicate resistin as a link between inflammation, metabolism, and heart disease.*

ER β Selective Agonist Inhibits Angiotensin-Induced Cardiovascular Pathology in Female Mice • Ali Pedram, Mahnaz Razandi, Kenneth S. Korach, Ramesh Narayanan, James T. Dalton, and Ellis R. Levin • *The findings provide additional understanding of the antihypertrophic effects of ER β and serve as an impetus to test specific receptor agonists in humans to prevent the worsening of cardiovascular disease.*



Determinants of the Heightened Activity of Glucocorticoid Receptor Translational Isoforms • Ingrid K. Bender, Yun Cao, and Nick Z. Lu •

These studies, together with the observations that GR isoforms have a cell-specific expression pattern, provide a molecular basis for the tissue-specific functions of GR translational isoforms.

Infarct-Induced Steroidogenic Acute Regulatory Protein: a Survival Role in Cardiac Fibroblasts • Eli Anuka,

Natalie Yivgi-Ohana, Sarah Eimerl, Benjamin Garfinkel, Naomi Melamed-Book, Elena Chepurkol, Dan Aravot, Tova Zinman, Asher Shainberg, Edith Hochhauser, and Joseph Orly • *Post-infarction expression of non-steroidogenic STAR in cardiac fibroblasts has a novel anti-apoptotic activity allowing myofibroblast precursor cells to survive the traumatized event, probably in order to differentiate and function in tissue repair at the infarction site.*



Key Role of CRF in the Skin Stress Response System •

Andrzej T. Slominski, Michal A. Zmijewski, Blazej Zbytek, Desmond J. Tobin, Theoharis C.

Theoharides, and Jean Rivier • *CRF and CRFR-1 may constitute novel targets through the use of specific agonists or antagonists especially for therapy of skin diseases that worsen with stress, such as atopic dermatitis and psoriasis.*

Thyroid Hormone, Thyromimetics, and Metabolic Efficiency • Einav Yehuda-Shnaidman, Bella Calderon, and Jacob Bar-Tana • *Permeability transition pore (PTP) gating may offer a unified target for some TH pleiotropic activities and may serve as a novel target for synthetic functional thyromimetics designed to modulate metabolic efficiency. PTP gating by long-chain fatty acid analogs may serve as a model for such strategy.*

SPOTLIGHT ON SOCIETY POLICY:

Recognition of Cognitive Specialists as Congress Moves Forward on Medicare Physician Payment Reform

On January 1, 2014, physicians again face drastic cuts to their Medicare reimbursement if Congress fails to pass a legislative fix to the sustainable growth rate (SGR). The SGR formula has been in place since 1997 to ensure that payments for Medicare services do not exceed the rate of growth in the U.S. economy. Due to flaws in the formula, each year Congress must pass a short-term patch to prevent double-digit cuts to physician payments from occurring. While there has been widespread agreement that the SGR should be permanently repealed, fiscal

considerations have prevented this legislation from passing. However, with revised estimates from the Congressional Budget Office dropping the price tag for repeal of significantly, Congress may finally have the bandwidth needed to do away with the system.

Over the last year, the committees in both the House and the Senate have been pushing for the permanent repeal of the SGR. The Society has been working with the committees' on the legislative frameworks for its replacement to ensure that the value of cognitive specialties is taken into

account. Before the August recess, the House Energy and Commerce committee voted unanimously to approve the Medicare Patient Access and Quality Improvement Act that would permanently repeal the SGR and replace the system with five years of stable payments to allow for the development and testing of alternative payment models by which to reimburse physicians. The Society has provided comments to the Committee during each step in this process and is largely supportive of the framework.

The Senate also continues to explore SGR reform and has held hearings in recent months. The Society will continue to advocate on behalf of cognitive specialties and will update its members as Congress moves forward on this important issue. Send a letter to Congress and let

them know that continuing to delay the SGR repeal is unsustainable by going to: <https://www.endocrine.org/advocacy-and-outreach/contact-congress>.

The Physician Payments Sunshine Act: What You Need to Know

The Physician Payments Sunshine Act was a provision passed in the Affordable Care Act that requires drug manufacturers to report certain payments and items of value that are given to physicians and teaching hospitals. The provision is intended to provide additional transparency between industry and the physician community by tracking payments for items like consulting, honoraria, grants, and compensation for serving as faculty. Manufacturers have been required to collect and track this information beginning August 1, 2013 and will submit reports to the Centers for Medicare and Medicaid Services (CMS) each year. As CMS moves forward with the implementation of the Sunshine Act, here's what you need to know:

1. Drug manufacturers are responsible for reporting information to CMS, not physicians; however, you will need to provide your NPI number to the Society to help ensure correct reporting.
2. To find your NPI or to update your information, go to the National Plan and Provider Enumeration System website at: <https://nppes.cms.hhs.gov>.
3. Physicians will have the opportunity to review information that has been reported about them by June 2014 and can dispute any erroneous information.

CMS is expected to launch an online portal by January 1, 2014 that enables physicians to receive direct notices when/if data is reported on them. The Society will inform its members on how to sign up for the online portal once it has been launched. Additional information on the Sunshine Act can be found at: <https://www.endocrine.org/education-and-practice-management/>. For questions about the program, contact the CMS Help Desk at OpenPayments@cms.hhs.gov.

October 1 Opening of Health Insurance Exchanges Marks Key Milestone in ACA Implementation

Since its enactment in 2010, the Affordable Care Act (ACA) has been a major source of contention on Capitol Hill with more than 40 votes to repeal or defund it, and consideration by the U.S. Supreme Court of the law's constitutionality. While these failed attempts have continued to fuel the public debate over healthcare in America, the Obama administration has pushed forward with the implementa-

SOCIETY ADVOCACY News & Resources

The Society advocates on a wide spectrum of issues of importance to its membership. This fall, as Congress debated funding for biomedical research, the Society was the leading voice for endocrine research, conducted multiple Hill Days and congressional visits, as well as online grassroots campaigns. For the latest information about the status of NIH funding and information for how you can take part in this important debate, please visit www.endocrine.org/advocacy-and-outreach/contact-congress.

To see all of the recent Society policy statements and letters, please visit www.endocrine.org/advocacy-and-outreach.



tion of the law. As a result, several provisions of benefit to patients with endocrine-related disease have gone into effect: Insurers can no longer deny coverage based on pre-existing conditions, plans must provide free preventive care, and young adults are able to stay on their parents' insurance until the age of 26. New care models promoting quality and care coordination also have been established, and the expansion of Medicaid coverage has allowed more Americans access to healthcare.

On October 1, the administration achieved the next milestone in healthcare reform with the opening of enrollment for state health insurance exchanges. The ACA requires all states to have a mechanism by which individuals and small businesses can receive insurance coverage by January 1, 2014. Fourteen states and Washington, D.C., have opted for a state-based exchange; 19 states have selected a federally facilitated exchange; and the remaining states have chosen some variation of these two models.

The implementation of this critical provision will enable an estimated 9 million Americans to receive coverage from federally and state-supported health insurance exchanges in the coming year — and 29 million by 2022. The administration has launched healthcare.gov to help guide patients and small businesses navigate the various insurance coverage options. To receive additional updates on the implementation of key provisions in the Affordable Care Act, stay tuned to *Endocrine Insider*. **EN**

Event CALENDAR

**OCTOBER 12, ATLANTA AND MINNEAPOLIS
OCTOBER 19, SEATTLE; OCTOBER 26, TAMPA AND
NEW YORK; NOVEMBER 2, PHOENIX**

Endocrine Essentials Live (EEL)

www.endocrine.org/meetings/regional/endocrine-essentials-live

OCTOBER 16-20, 2013, SAN JUAN

American Thyroid Association

www.thyroid.org/events/83rd-annual-meeting-of-the-ata/

NOVEMBER 9-13, 2013, SAN DIEGO

Society for Neuroscience Annual Meeting www.sfn.org/

NOVEMBER 12-15, 2013, CANCUN

Highlights of ENDO: Mexico; Mexican Endocrine Society Mtg.

www.endocrine.org/meetings/international/highlights-of-endo/mexico

NOVEMBER 13-16, 2013, JAKARTA

AFES 2013, The 17th Congress of The ASEAN Federation of Endocrine Societies

www.afes2013.org/

ENDOCRINE PRESS Releases New *Diagnostic Dilemmas* Collection

Diagnostic Dilemmas: Images in Endocrinology, the latest publication from Endocrine Press, provides unique insight and physician practice strategies for identifying rare illnesses and figuring out complicated conditions through 30 real-life case studies.

**"The book presents a series of puzzles
physicians can use to test their knowledge
and ability to reach a diagnosis."**

— Leonard Wartofsky, MD, editor of
Diagnostic Dilemmas

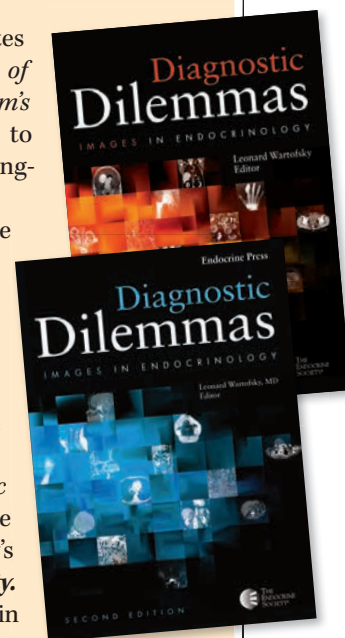
"The book presents a series of puzzles physicians can use to test their knowledge and ability to reach a diagnosis," says Leonard Wartofsky, MD, editor of *Diagnostic Dilemmas*. "Physicians can return to the exercises again and again to retest the diagnostic approach and incorporate lessons learned."

Diagnostic Dilemmas incorporates full-color images from *The Journal of Clinical Endocrinology & Metabolism's* "Images in Endocrinology" series to help doctors navigate these challenging cases.

The second edition of one of The Endocrine Society's most popular titles, *Diagnostic Dilemmas* was updated to include expanded discussions, updated reference citations, and current status reports on the patient outcomes from recent visits.

The print version of *Diagnostic Dilemmas* is available for purchase through The Endocrine Society's online store, <http://store.endo-society.org/>. The content will be available in electronic book formats beginning this fall through the Society's online store and distributors such as Amazon and ebrary — an international supplier of e-books to academic, professional, corporate, and public libraries.

Catering to a broad audience of healthcare professionals and patients, Endocrine Press publishes peer-reviewed research and clinical resources on hormone conditions and health. For more information on Endocrine Press or to submit a book proposal, visit <https://www.endocrine.org/endocrine-press>. **EN**



Cleveland Clinic Summit to Address OBESITY

Cleveland Clinic's 11th Annual Medical Innovation Summit on October 14–16 will welcome more than 1,000 clinicians, executives, and investors to downtown Cleveland to share the latest innovations and to discuss their common goal of combatting the obesity epidemic.

Obesity and its various, subsequent complications, now cost the U.S. healthcare system 10% of its national medical budget — a staggering \$147 billion — each year. As such, metabolic markets are expanding quickly, and industry leaders will provide insight into the trends that affect this area of healthcare, from the impact of bariatric surgery on diabetic patients to the

growth of obesity around the world.

The summit will culminate with a presentation of the Top 10 Medical Innovations that will significantly affect the healthcare system in 2014.

Visit www.ClevelandClinic.org/Summit before October 11 at 9 p.m. to register. If you miss the deadline, you can still register on site for an added cost. You can also call 216-445-5004 or email MedicalInnovation-Summit@ccf.org if you have trouble registering.

For up-to-the-minute coverage of the summit, join the conversation on Twitter by following #MIS2013 and follow Cleveland Clinic Innovations. **EN**

Association of Endocrine Chiefs and Directors (AECD)

AECD members are encouraged to visit the Discussion Board and participate in some of the dynamic topics, including Productivity and Compensation, ENT vs. Endocrine Surgery, and Inpatient Diabetes Care. Share your thoughts on the current threads or start a new topic for your colleagues to consider. Log in at <http://forums.endo-society.org> and join the conversation! Not a member of AECD? Learn more about at www.endocrine.org/AECD.

THE ENDOCRINE SOCIETY CONGRATULATES Dr. Margaret K. Offermann on Election to FASEB PRESIDENT



This past July, Margaret K. Offermann, MD, PhD, began her one-year term as the president of the Federation of American Societies for Experimental Biology (FASEB). Offermann is a managing partner at the Salutramed Group Inc., a life sciences consulting firm. In previous years, Offermann served on the faculty of Emory University as professor of hematology and oncology and was deputy national vice president for research at the American Cancer Society. With her collective experience in these settings, Offermann brings a tremendous amount of

insight to her new role with FASEB.

The Endocrine Society has been a FASEB member organization since 1999 and works with FASEB to address science policy issues on behalf of our members. As a FASEB member organization, The Endocrine Society joins a strong collective voice to more effectively advocate for biomedical researchers. In August, Endocrine Society president Teresa Woodruff, PhD, and FASEB board representative Carole Mendelson, PhD, participated in a conference call with Offermann to discuss shared goals and collaborative efforts. The Society looks forward to continuing to work with Offermann and FASEB in 2014. **EN**



Now Accepting FLARE Applications!

The Society is now accepting applications for the Future Leaders Advancing Research in Endocrinology (FLARE) Program. FLARE is open to underrepresented minority trainees who want the knowledge, skills, and network to become independent researchers. FLARE provides leadership and career development training, professional connections, and a year of committee service and leadership experience.

Visit www.endocrine.org/FLARE to learn more and apply by Nov 1, 2013.

Wah Named AMA President



Congratulations to Robert M. Wah, MD, a reproductive endocrinologist and ob-gyn at Walter Reed National Military Center on being elected president of the American Medical Association (AMA). The Endocrine Society looks forward to closely working with Wah on matters of importance to endocrinology and the broader physician community. Wah will be sworn in as president in June 2014.



THE ENDOCRINE SOCIETY'S 96th ANNUAL MEETING & EXPO

ICE/ENDO 2014 At-a-Glance

Official name:

The 16th International Congress of Endocrinology Held Jointly with The Endocrine Society's 96th Annual Meeting & Expo

Dates:

June 21-24, 2014

Location:

McCormick Place West
Chicago, IL

Member registration opens:

October 23, 2013

Abstract submission opens:

December 3, 2013

Abstract submission closes:

January 29, 2014

URL:

www.ice-endo2014.org

ENDO EXPO PLAY Returns

ENDOExpo Play is back and it's ready to make you a winner. Each time you speak with a participating exhibitor at ENDOExpo, you'll earn one entry into a daily raffle with some amazing prizes. Last year's top reward?

A \$1,000 Apple gift card.

The BEST of BOTH WORLDS

Plan now for ICE/ENDO 2014, endocrinology's largest meeting

The world's largest endocrinology meeting is coming to Chicago in June 2014. For the first time in 18 years, The Endocrine Society and the International Society of Endocrinology are joining forces to host a global summit on hormone research and clinical practice: **ICE/ENDO 2014**.

Bigger & Better

The rare joint conference promises to be bigger and better than ever, combining all that **ENDO** and **ICE** have to offer. The lineup will feature a mix of insightful plenary sessions, distinguished international speakers, and well-deserved awards in science, leadership, teaching, and service.

Endocrinologists from all around the world will network with over 10,000 of the field's brightest minds and attend engaging meet-the-professor sessions, diverse ancillary events, and a targeted preconference program of career forums and hands-on workshops. Of course, no conference would be complete without a robust event calendar, and this time, the full weight of **ICE/ENDO 2014**, and the beautiful city of Chicago will be behind it.

Full of Surprises

ICE/ENDOExpo promises to be a global experience of educational activities and lively events. Be sure to visit the official website, www.ice-endo2014.org, frequently for updates on planned attendee activities during **ICE/ENDOExpo**. Popular activities such as the two Prize Wheels, Photo Booth, and World Map will return along with a few special surprises for attendees!

Our Kind of Town

An event of this magnitude deserves an extraordinary venue. McCormick

Place West is a massive meeting space on the shore of Lake Michigan just a few miles south of downtown Chicago. The convention site acts as the perfect launching pad for exploring all Chicago has to offer. Attendees can tour world-class museums, galleries, and exhibitions — like the Art Institute of Chicago or the Shedd Aquarium. There's also a legendary music scene to explore along with famous shopping, dining, and night-life destinations.

Make Your Plans Now

Don't miss what promises to be the world's largest gathering of endocrinologists — one that won't be duplicated for many years to come. Register for **ICE/ENDO 2014** starting in October to reserve your place at the research sessions, on the **ENDOExpo** floor, and in the vibrant metropolis of Chicago. **EN**

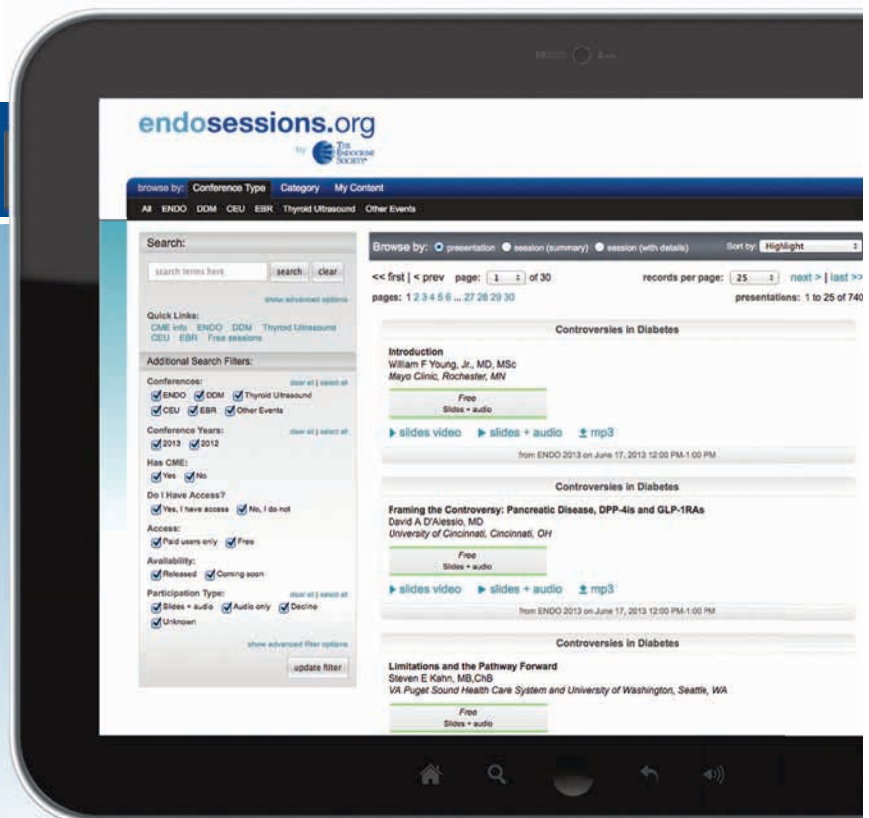


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- Diabetes Diagnosis & Management 2013
- 2012 Clinical Endocrinology Update
- 2012 Endocrine Board Review
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2015 LAUREATE AWARDS

CALL FOR NOMINATIONS
OCTOBER 1, 2013 – JANUARY 3, 2014 MIDNIGHT EDT

Fred Conrad Koch Lifetime
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Gerald D. Aurbach Award for
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Investigator Award

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Practitioner Award

Outstanding Educator Award

Outstanding Innovation Award

Outstanding Leadership in
Endocrinology Award

Outstanding Mentor Award

Outstanding Public Service Award

Outstanding Scholarly
Physician Award

Richard E. Weitzman Outstanding
Early Career Investigator Award

Roy O. Greep Award
for Outstanding Research

Sidney H. Ingbar Award for
Distinguished Service

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Questions?

Contact: laureate@endocrine.org



Victoza® —a force for change in type 2 diabetes.

For patients like Laura who are uncontrolled on metformin, **Victoza® provides quick and lasting control:**

- HbA_{1c} reductions and the additional benefit of weight loss were seen within 12 weeks and sustained for 52 weeks^{1*}

Laura's baseline HbA_{1c}

7.6%

BMI
32 kg/m²

FPG 9.2 mmol/L



***Victoza® is not indicated for the management of obesity, and weight change was a secondary end point in clinical trials.**

Reference: 1. Pratley R, Nauck M, Bailey T, et al; for the 1860-LIRA-DPP-4 Study Group. One year of liraglutide treatment offers sustained and more effective glycaemic control and weight reduction compared with sitagliptin, both in combination with metformin, in patients with type 2 diabetes: a randomised, parallel-group, open-label trial. *Int J Clin Pract.* 2011;65(4):397-407.

Prescribing information

Victoza®
Liraglutide.

Victoza® 6 mg/ml pre-filled pen

1 ml of solution contains 6 mg of liraglutide. One pre-filled pen contains 18 mg liraglutide in 3 ml.
Indication: Treatment of adults with type 2 diabetes mellitus in combination with metformin or a sulphonylurea, in patients with insufficient glycaemic control despite maximal tolerated dose of metformin or sulphonylurea monotherapy; or in combination with metformin and a sulphonylurea, or metformin and a thiazolidinedione in patients with insufficient glycaemic control despite dual therapy. **Posology and administration:** Victoza® is administered once daily by subcutaneous injection and at any time independent of meals however it is preferable to inject around the same time of day. Victoza® should not be administered intravenously or intramuscularly. Recommended starting dose is 0.6 mg daily, after at least one week, the dose should be increased to a maintenance dose of 1.2 mg. Based on clinical response, after at least one week the dose can be increased to 1.8 mg. Daily doses higher than 1.8 mg are not recommended. When added to existing sulphonylureas or in combination with metformin and sulphonylureas, a reduction in the dose of sulphonylurea may be necessary to reduce the risk of hypoglycaemia. Victoza® can be used in the elderly (>65 years) without dose adjustment but therapeutic experience in patients ≥75 years is limited. No dose adjustment for patients with mild renal impairment (creatinine clearance (CrCl) 60-90 ml/min). Due to lack of therapeutic experience Victoza® is not to be recommended for use in patients with moderate (CrCl of 30-59 ml/min), severe (CrCl <30 ml/min) and end-stage renal disease or patients with hepatic impairment or children <18 years. **Contraindications:** Hypersensitivity to the active substance or any of the excipients. **Special warnings and Precautions for use:** Victoza® should not be used in patients with type 1 diabetes mellitus or for the treatment of diabetic ketoacidosis. Victoza® is not a substitute for insulin. The addition of Victoza® in patients already treated with insulin has not been evaluated and is therefore not recommended. Limited experience in patients with congestive heart failure New York Heart Association (NYHA) class I-II and no experience in patients with NYHA class III-IV. Due to limited experience Victoza® is not recommended for patients with inflammatory bowel disease and diabetic gastroparesis. Victoza® is associated with transient gastrointestinal (GI) adverse reactions. GLP-1 analogues have been associated with pancreatitis; patients should be informed of symptoms of acute pancreatitis if pancreatitis suspected, Victoza® and other suspect medicinal products should be discontinued. Thyroid adverse events, including increased blood calcitonin, goitre and thyroid neoplasm reported in clinical trials particularly in patients with pre-existing thyroid disease. Risk of dehydration in relation to GI side effects; take precautions to avoid fluid depletion. No studies on effects on ability to drive and use machinery. Patients advised to take precautions to avoid hypoglycaemia while driving and using machines, in particular when Victoza® is used in combination with sulphonylureas. In the absence of compatibility studies Victoza® must not be mixed with other medicinal products. **Fertility, pregnancy and lactation:** If a patient wishes

to become pregnant, pregnancy occurs or is breast feeding, treatment with Victoza® should be discontinued; use of insulin is recommended instead. Apart from a slight decrease in number of live implants in animal studies no harmful effects on fertility observed. **Undesirable effects:** The most frequently observed adverse reactions from long term phase 3 controlled studies and spontaneous (post-marketing) reports were: Very common (≥1/10): nausea, diarrhoea, hypoglycaemia when used in combination with sulphonylureas, headache when used in combination with metformin and vomiting when used in combination with metformin and rosiglitazone; Common (≥1/100 to <1/10): vomiting, constipation, abdominal pain, discomfort and distension, dyspepsia, gastritis, flatulence, gastroesophageal reflux disease, gastroenteritis viral, toothache, headache, dizziness, nasopharyngitis, bronchitis, hypoglycaemia, anorexia, appetite decreased, fatigue, pyrexia and rash; Not known (cannot be estimated from the available data): Increased heart rate. GI adverse reactions are more frequent at start of therapy but are usually transient. Patients >70 years or with mild renal impairment (CrCl 60-90 ml/min) may experience more GI effects. Consistent with medicinal products containing proteins/peptides, patients may develop anti-liraglutide antibodies following treatment but this has not been associated with reduced efficacy of Victoza®. Few cases of: angioedema (0.05%), acute pancreatitis (<0.2%), injection site reactions (usually mild, approx. 2%). Rates of thyroid adverse events - 33.5, 30.0 and 21.7 events/1000 subject years of exposure for liraglutide, placebo and total comparators; Thyroid neoplasms, increased blood calcitonin and goitres are the most frequently reported thyroid adverse events/1000 subject years of exposure were 6.8, 10.9 and 5.4 of liraglutide treated patients in comparison with 6.4, 10.7 and 2.1 of placebo treated and 2.4, 6.0 and 1.8 of total comparator treated. Few cases of allergic reactions (including urticaria, rash and pruritus) and anaphylactic reactions with additional symptoms (such as hypotension, palpitations, dyspnoea, oedema) have been reported with marketed use of Victoza®. The Summary of Product Characteristics should be consulted for a full list of side effects. **MA numbers and Basic NHS Price:** 2 x 3 ml pre-filled pens EU/1/09/529/002 £78.48; 3 x 3 ml pre-filled pens EU/1/09/529/003 £117.72. **Legal Category:** POM. **Further prescribing information can be obtained from:** Novo Nordisk Limited, Broadfield Park, Brighton Road, Crawley, West Sussex, RH11 9RT. Marketing Authorisation Holder: Novo Nordisk A/S, Novo Allé, DK-2880 Bagsvaerd, Denmark. **Date last revised:** March 2013.

Adverse events should be reported. Reporting forms and information can be found at www.mhra.gov.uk/yellowcard. Adverse events should also be reported to Novo Nordisk Limited (Telephone Novo Nordisk Customer Care Centre 0845 6005055). Calls may be monitored for training purposes.

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July 2013



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At Novo Nordisk we are changing diabetes. In our approach to develop treatments. In our commitment to operate profitably and ethically and in our search for a cure.

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