The American Diabetes Association® hosts the world’s largest diabetes meeting

The ADA's annual Scientific Sessions attracts attendees from all 50 states and more than 100 countries, all with one goal: sharing research advances to improve the lives of people with and affected by diabetes.
The patient suffering from the syndrome of diabetes mellitus is the reason for the existence of the Association.”

Dr. Cecil Striker
Inaugural Presidential address

Today, Dr. Striker’s words still hold true. Our annual meeting has grown significantly since 1941, but the people living with and affected by diabetes remain at the center. The Scientific Sessions gives scientists a place to share their latest research findings; it gives physicians an opportunity to understand how to best treat patients; it gives diabetes educators a chance to share information on how to help patients manage diabetes. Today, more than 15,000 people attend the conference, which has long been the world’s largest diabetes meeting.

| 1941 | The first Scientific Sessions was held in 1941 and attracted 250 attendees. |

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| 850+ | Presenting Faculty |
| 2,848 | Scientific Abstracts Published |
| 2,378 | Poster Presentations |
| 15,291 | Total Attendance |
| 45 | Moderated Poster Discussions and ePoster Theater Sessions |
| 5,000+ | Attendees at Large Sessions |
Joint ADA/JDRF symposium: Benefits of Continuous Glucose Monitoring in kids with type 1 diabetes

This year, the ADA and JDRF invited experts to answer an important question: Is Continuous Glucose Monitoring (CGM) in pediatric patients ready for prime time?

“The answer to our question is a resounding, yes,” said Dr. David Maahs, who gave an overview of CGM technology and recent advances at the session. “Soon, if not already, CGM will become the primary method to assess glucose. The only real question is how soon to start CGM after diagnosis.”

CGM offers clear advantages over traditional blood glucose monitoring (BGM), Dr. Maahs continued. BGM is a snapshot while CGM is a continuous video that fills in the enormous data gaps between finger sticks. CGM also reduces the cognitive burden on patients and caregivers. And once patients and caregivers come to trust CGM readings, finger sticks can become memories rather than a routine burden.

Multiple studies presented at the session demonstrated that in children and adolescents, adoption of CGM technology led to more time spent in optimal blood glucose ranges. Importantly, this included results showing less time spent in hypoglycemia (low-blood glucose), which places significant physical and psychological burden on patients and caregivers. Read more about this important research.

Studies provide long-term safety, efficacy data for artificial pancreas use

Several studies presented at this year’s Scientific Sessions demonstrated the safety and efficacy of artificial pancreas systems for insulin delivery and glycemic control, a signal that this long-discussed technology is moving closer to approval and widespread use.

Results from the first human study testing a closed-loop fully automated bionic pancreas system called the ‘iLet’, were presented. The iLet significantly increased the percentage of time glucose levels were in target range when compared to either multiple daily insulin injections or continuous subcutaneous insulin infusion.

“It was encouraging to see that multiple daily injection users achieved good glucose control with the iLet in the home setting despite their lack of prior experience with an insulin pump. The dosing algorithms in the bionic pancreas automatically adapted to the patient and their changing insulin requirements, no training period was needed for either the pump or multiple daily injection subjects, and their weight was the only data point needed to initiate the iLet,” said lead study author Rabab Jafri, MBBS, MD.

Additional studies showed that closed-loop systems are safe and effective at lowering average blood glucose. Learn more about these studies.
Can we prevent or delay the onset of type 1 diabetes?

Years of research have led to insights on many of the genetic and environmental factors that increase risk for development of type 1 diabetes. Now, scientists are trying to leverage that information to prevent or delay development of type 1 diabetes in people known to be at high-risk. Several trials presented this year demonstrated progress towards this goal.

In one study, an immune therapy was able to delay the manifestation of type 1 diabetes for two years in a very high-risk population. A second trial demonstrated a new therapy that was able to preserve insulin production and improve glucose control in patients who were recently diagnosed. Read more about this exciting research to prevent and delay type 1 diabetes.
Our Mission:
To prevent and cure diabetes and to improve the lives of all people affected by diabetes.
New results show potential for reducing need for injections in T2D

Medications that target Glucagon-like Peptide-1 (GLP-1) have consistently shown beneficial effects in people with type 2 diabetes including enhanced weight-loss, improved glucose control, and a reduction in heart attacks. Since their initial approval in 2003, several different versions of this same class of medications have been approved. However, all required they be injected, a significant deterrent for patient use and adherence. That soon may change. A formulation of this medication has been developed that can be taken as a pill. Results presented at the Scientific Sessions show this new oral medication had the same significant beneficial effects without the need for injections. Find out more!

Insulin-producing beta-cells are not irreversibly lost in type 2 diabetes

The loss of insulin-producing beta cells is believed to be a key factor in the development of type 2 diabetes. Previous studies have hinted that it might be possible to reverse type 2 diabetes with enough weight-loss, challenging the long-held belief that development of type 2 diabetes can only be managed, not reversed. Results presented from the Diabetes Remission Clinical Trial (DiRECT) indicate that, if initiated early following diagnosis, the function of insulin-producing beta-cells can be restored when sufficient weight is lost and the weight loss is maintained. Learn more about the findings in DiRECT by reading our Press Release.

New study suggests beneficial effect of bariatric surgery on glucose control can be mimicked without surgery

The ability of bariatric surgery to reverse type 2 diabetes in some patients has long perplexed and excited scientists. Due to a variety of reasons, only a small percentage of people with type 2 diabetes undergo gastric bypass surgery, meaning few people receive the beneficial effects. What if there were a way to mimic the beneficial effects of bariatric surgery without the need for surgery?

Dr. Tricia M. Tan of the Imperial College London in Great Britain presented results of a study that showed that infusion of three hormones over a one-month period caused reduced caloric intake and promoted significant weight loss. These three hormones are known to be elevated after bariatric surgery.

“Our study group had glucose improvements comparable with gastric bypass and had better glucose tolerance than gastric bypass even though gastric bypass had twice the weight loss,” Dr. Tan said. In the future, it may be possible to dramatically improve glucose control in people with type 2 diabetes without the need for bariatric surgery.
**Complications**

**Advances Presented**

**Heart disease**

Heart disease is the leading cause of death in the United States, and people with diabetes have double the risk of heart disease compared to people who do not have diabetes. Several major clinical trials presented at this year’s Scientific Sessions give hope that this major complication of diabetes can be addressed with existing medications.

These trials show that two different classes of medication significantly reduce diabetes-related major cardiovascular events in both populations who have never had a cardiac event and were low-risk, and those who were at very high-risk for a cardiac event. Both saw benefits.

Taken together, results from these studies and others presented at the 79th Scientific Sessions give hope that cardiac events related to type 2 diabetes can be reduced with newer types of approved diabetes therapies.

REWIND trial: Dulaglutide reduces cardiovascular disease in type 2 diabetes patients

DECLARE-TIMI 58 trial demonstrates safety, efficacy of SGLT2 inhibitors

**Diabetic kidney disease**

Diabetic kidney disease (DKD) is a very serious complication of diabetes characterized by reduced kidney function. DKD affects between 20 to 40% of patients with diabetes. New medications have led to the reduction in rates of many complications related to diabetes; however, DKD has proven more difficult to prevent or treat. Now, research presented at the Scientific Sessions suggests exciting progress in the fight against DKD.

A major clinical trial, CREDENCE, evaluated the ability of SGLT-2 inhibitors to slow progression of DKD. More than 4,000 people participated in the study, which showed a significant reduction in progression of DKD associated with an SGLT-2 inhibitor called canagliflozin. The results were so dramatic that the trial was stopped early.

These results could have substantive impact on clinical practice for type 2 diabetes patients with or at high risk for DKD. See our press release on CREDENCE.
Banting Medalist Professor Sir Stephen P. O’Rahilly, MD: Rare genetic variants in humans help to unravel physiology of obesity, diabetes

The Banting Medal for Scientific Achievement is the highest scientific award bestowed by the American Diabetes Association. Given in memory of Sir Frederick Banting, a medical scientist, doctor and Nobel laureate who is noted as one of the key investigators responsible for the discovery of insulin, the Banting Medal is awarded annually to honor highly meritorious career achievement in the field of diabetes research.

At the 2019 Scientific Sessions, Professor Sir Stephen O’Rahilly received the Banting Medal and delivered an accompanying lecture entitled, “Treasure Your Exceptions—Studying Human Extreme Phenotypes to Illuminate Metabolic Health and Disease.”

The key to success in research is spotting the right set of outliers and following the clues they provide, explained Dr. O’Rahilly, Director of the University of Cambridge Metabolic Research Laboratories. In his lecture, Dr. O’Rahilly gave a historical account of his scientific journey, describing the key ‘outlier’ patients that he helped treat and which guided his medical research. Through this approach, he made seminal discoveries in the causes of insulin resistance, a key process in the development of type 2 diabetes.

Dr. O’Rahilly concluded by thanking the exceptional patients and the exceptional people that were the cornerstone of his diabetes research career.

Outstanding Scientific Achievement Awardee Sadaf Farooqi, MB, ChB (Hons), PhD: Changing the narrative of the obesity epidemic through research

Sadaf Farooqi, MB, ChB (Hons), PhD, presented this year’s Outstanding Scientific Achievement Award lecture at the Scientific Sessions. This award recognizes a scientist who has made significant contributions to an area of diabetes and is under the age of 50. Dr. Farooqi, a Professor of Metabolism and Medicine at the University of Cambridge in the UK, has focused her clinical and research career on tracking down the genetic drivers and molecular signals that regulate body weight.

The narrative of obesity has long put the blame on the patient. Often, obese people are told their weight gain is due to a lack of willpower, which results in eating too many calories and not exercising enough.
However, Dr. Farooqi’s research on the genetics of obesity in humans has led her to the conclusion that this is not the entire story. A key question which her research addresses is why people who are overweight consume more calories than they expend.

"Eating behavior is not free will," said Dr. Farooqi. "There’s an innate component that is hard-wired into the brain, as well as environmental factors. Between 40 and 70 percent of obesity can be attributed to genetic factors. That suggested genetic approaches might be used to discover the mechanisms of weight regulation."

In the 1990s, her work pioneered leptin replacement therapy for children with genetic variants in leptin that rendered it non-functional. The exciting finding that leptin could regulate appetite in humans motivated Dr. Farooqi to organize the Genetics of Obesity Study (GOOS), which is a collection of thousands of individuals from around the world with different forms of genetic obesity. Through this subsequent study, Dr. Farooqi and her team discovered a number of genetic variants that are responsible for severe obesity in humans, most of which regulate appetite centers in the brain.

Dr. Farooqi’s lecture also touched upon her recent research into why some people are able to remain thin regardless of the food they eat or their exercise habits. She discovered that there are some genetic variants that help people maintain their thinness.

“Thin people are thin because they have less of the genetic variants that make people obese, not because they are morally superior,” said Dr Farooqi, tongue in cheek. “We are very interested in finding the genes that drive those phenotypes.”
ADA President of Medicine & Science Louis H. Philipson, MD, PhD, FACP: Precision medicine can be ‘transformational’ for patients and clinicians

Precision medicine is an approach to patient care that calls for the personalization of treatments based in part on one’s genetics. In his address, Dr. Louis H. Phillipson discussed the future of precision medicine and what medical professionals and advocates can do now to actualize its power. He called for expanded genetic testing and for physicians to explore family history when treating patients. Using powerful examples from his own experience as a clinician and scientist, he demonstrated how research has led to a good understanding of types of diabetes caused by a single genetic variant. Because of this understanding, he and other doctors have been able to personalize treatments for these patients, allowing them to thrive and lead normal lives.
“That is the ultimate promise of precision medicine: Finding an inexpensive drug that exactly fixes a problem to simplify and improve treatment,” Dr. Philipson said. “It’s not a cure, it’s not without other problems, but it’s spectacularly better than what we had before.”

During his address, Dr. Philipson emphasized the need for more research in order to push precision medicine forward. Without a precise understanding of the mechanisms underlying diseases, including different forms of diabetes, personalizing medicine will be challenging. He ended his address by encouraging people to support the ADA’s flagship research initiative, Pathway to Stop Diabetes.

**ADA President of Health Care & Education**

**Gretchen Youssef, MS, RDN, CDE: Access is key for better outcomes**

In her address to Scientific Sessions attendees, Gretchen Youssef urged the audience to become active advocates for improving patient access to both high-quality diabetes care and self-management education and support (DSMES).

“For the person with diabetes, access is the foundation of optimal health, outcomes, quality of life, and affordable medical costs,” Ms. Youssef said. “For the health-care system and society, improved access will help to control the rising health impacts and cost burdens of diabetes.” However, availability and access to diabetes patient education programs is a significant barrier to overcome, Ms. Youssef acknowledged, noting that DSMES programs are understaffed, underutilized, and unavailable to many, particularly in rural and underserved communities. Medication costs represent another huge barrier to access that Ms. Youssef noted the ADA is working hard to address.

In addition, with an estimated one-third of U.S. adults having prediabetes, Ms. Youssef said there’s an ever-increasing need for access to diabetes prevention services, something that continues to be a major focus of the ADA’s Government Affairs and Advocacy efforts.

While early results of the National Diabetes Prevention Program (NDPP) are promising, Ms. Youssef said they also highlight the challenges of translating results of a randomized controlled trial into the real-world setting.

Ms. Youssef encouraged the audience to become advocates for access to care, education, and medication by signing up at diabetes.org/advocatesignup.
Pathway to Stop Diabetes®

In 2013, the ADA launched its most innovative research initiative yet, Pathway to Stop Diabetes. The Pathway program has a simple, bold vision: Bring 100 brilliant scientists to diabetes research. The program identifies and selects individuals who possess transformative capacity among those nominated as the single most promising scientist within their institution. This year, we welcomed three new Pathway awardees to this prestigious group, bringing the total number of funded scientists to 32. The 2019 award recipients presented their projects at the annual Pathway symposium, which was attended by the Pathway Mentor Advisory Group, ADA leadership, and philanthropic and corporate Pathway supporters. The three new award recipients were:

- Ebony B. Carter, MD, (photo, right) Washington University, in St. Louis, Missouri, received a Pathway Accelerator Award for her clinical research project titled, “Targeted lifestyle change group prenatal care for obese women at high risk for gestational diabetes: a randomized controlled trial.”
- Sarah A. Tishkoff, PhD, University of Pennsylvania, in Philadelphia, received a Pathway Visionary Award for her basic research project titled, “Genetic risk factors for diabetes in populations of African Ancestry.”
- Matthew J. Webber, PhD, University of Notre Dame, in Notre Dame, Indiana, received a Pathway Accelerator Award for his bioengineering project titled, “Hypoglycemic rescue with glucose-responsive glucagon delivery devices.”

To see how each individual Pathway awardee is helping to drive transformational research, visit diabetes.org/pathway.

To learn more about Pathway, individuals and family foundations should contact Elaine Curran at ecurran@diabetes.org; or (800) 676-4065 Ext. 3413.

You can support Pathway by texting “Pathway” to 71760 or by going to diabetes.org/supportpathway.

ADA Interest Groups

The ADA’s 15 Interest Groups, which bring together 19,000 ADA Professional Members, held several events aimed at advancing diabetes research in specialized areas. Topics addressed include the usage of diabetes technology in schools, camps, and emergency rooms, as well as the epidemiology of diabetes complications.
75 members of ADA’s Interest Group Leadership Teams also met to discuss strategies for enhancing the dissemination of diabetes information through the Interest Groups and their easy-to-use online forum, as well as other new activities the Interest Groups can implement in the near future.

Additionally, five Interest Group Awards recognizing achievements in behavioral medicine, foot and cardiovascular complications, pregnancy, and epidemiology were presented to Frank J. Snoek, PhD, James Wrobel, DPM, MS, Peter Rossing, MD, DMSc, Assiamira Ferrara, MD, PhD, and Jin Choul Chai, PhD, respectively.

Women’s Interprofessional Network of the ADA

The Women’s Interprofessional Network of the ADA (WIN ADA), which has 2,300 members, held a mini-symposium on communicating science via social media. During WIN ADA’s Networking Reception, five awards were presented to women in science and medicine: the inaugural Lois Jovanovic Transformative Woman in Diabetes Award was given to Elizabeth R. Seaquist, MD, and abstract awards went to Aki Chaffin, PhDc, Danielle Dean, PhD, Samantha Ehrlich, PhD, MPH, and Xiang Liu, PhD.

Focus on Fellows

Focus on Fellows offers early career endocrinologists who treat diabetes and its complications small-group learning experiences and support. This year, ADA hosted more than 130 fellows who enjoyed a day and a half seminar that addressed career development topics including establishing a practice, starting a lab, publishing research, and finding a work/life balance. In addition, fellows had several opportunities to network and, prior to ADA’s Scientific Sessions, receive guidance on navigating the world’s largest diabetes meeting.

Diabetes is Primary®

As advances in diabetes treatment evolve at a rapid-fire pace, Diabetes Is Primary targets clinicians on the frontlines of primary care. Diabetes Is Primary delivers easily accessible continuing education to meet the needs of busy primary care providers (PCPs). This year, more than 200 PCPs attended the Diabetes Is Primary pre-conference. This one-day program highlighted the essential diabetes guidelines relevant to primary care. In addition to six continuing education credits, participants also received professional membership as a part of registration.
Mental Health Provider Diabetes Education Program Reaches Over 340 Professionals

ADA is making strides to ensure support for the psychosocial challenges faced by people with diabetes and their families.

A continuing education course developed in partnership with the American Psychological Association (APA) was launched two years ago.

The Mental Health Provider Diabetes Education Program (MHDEP) serves the growing need for mental health professionals trained in the complexities of diabetes management and effective treatment strategies specific to people with diabetes. The program is designed to teach mental health providers: 1) the demands of diabetes therapy on individuals and their mental health status and how they may integrate this knowledge into mental health therapy, and 2) issues specific to adults or pediatric populations that enables mental health providers to better understand how diabetes uniquely impacts people with diabetes across their lifespan.

During the program held at this year’s Scientific Sessions, 37 mental health care professionals from across the country were trained via an interactive and intimate environment that facilitated networking and sharing.

The panel of expert speakers included:

- Tom Fitzgerald, PhD, University of Michigan
- Michael Harris, PhD, Oregon Health Sciences University
- Marisa Hilliard, PhD, Baylor College of Medicine and Texas Children’s Hospital
- Sarah Jaser, PhD, Vanderbilt University School of Medicine

For more information, visit https://professional.diabetes.org/mentalhealth or email the ADA at mentalhealthprogram@diabetes.org

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