



# DIABETES IS PRIMARY

TIMELY NEWS FOR THE MULTIDISCIPLINARY CARE TEAM  
from the American Diabetes Association

## FROM THE JOURNALS.....

By Max Bingham, PhD

### **Malnutrition Worsens Mortality Risk in Older Adults With Diabetes**

Malnutrition in older adults can be a problem, but when it's combined with diabetes, it can dramatically increase mortality risk and health care costs, according to Ahmed et al. (*BMJ Open Diabetes Research and Care*, doi.org/gc2jqw). As a result, the authors suggest that identifying and treating patients with malnutrition should be a priority in diabetes care for older adults.

The conclusion comes from a retrospective observational study of >15 million diabetes patients that looked at the impact of malnutrition in diabetes with or without a range of significant comorbidities.

The authors identified just over 800,000 diabetes patients who had an additional diagnosis of malnutrition and found that the patients had a 69% higher risk of death compared to diabetes patients without malnutrition. Patients who had diabetes, malnutrition, and another significant comorbidity also had significantly higher risks of death compared to those without malnutrition, ranging from a 47% higher risk with acute myocardial infarction to a 63% higher risk with ischemic heart disease. Higher risks of death were also associated with chronic kidney disease, heart failure, stroke/transient ischemic attack, or chronic obstructive pulmonary disease. Median survival time from diabetes diagnosis to time of death was reportedly just under 2.5 years when malnutrition was present compared to just over 5 years in patients without malnutrition.

On the secondary outcome of health care costs, the authors found an average annual cost of just over \$36,000 for patients with diabetes and malnutrition compared to just over \$20,000 for those with diabetes but no malnutrition.

Bottom line? They conclude that concerted efforts are needed to identify and treat malnutrition in patients with diabetes.

### **Study Confirms Success of a Consultation Model for Diabetes Care**

A study by Rutten and van Vugt et al. (*Diabetes Care*, doi.org/ck5w) on the implementation of the Dutch Diabetes Federation's consultation model of diabetes care suggests that the approach can be used to successfully facilitate person-centered diabetes care and improve patients' involvement in and satisfaction with their care.

According to the authors, the consultation model comprises a series of steps, including documenting disease- and patient-related factors, setting personalized goals, choosing treatments, and reaching agreement between patient and provider on required care. The study included 74 physicians and 31 nurses who performed 1,366 consultations with diabetes patients.

The authors found the model to be appropriate for health care providers (HCPs) in about three-fourths of cases. Consultation time was roughly 25 minutes, and about two-thirds of patients spoke for more than half of the consultation time, most of which was devoted to person-related factors and ultimately resulted in the establishment of treatment goals. Just over 94% of patients made shared decisions with their HCP, and a significant minority felt more involved than before the model was introduced.

"The new approach leads to more patient involvement and a more relevant perception of shared decision making and is appreciated by a substantial number of patients," the authors concluded, adding that diabetes care providers may need some training to better provide "care that is respectful of and responsive to individual patient preferences, needs, and values and ensures that patients' values guide all clinical decisions."

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## TREATMENTS + THERAPIES

### De-Intensification of Glucose-Lowering Drugs May Be Advisable in Some Elderly Patients

Type 2 diabetes may be over-treated in some elderly patients, potentially leading to the development of harmful complications, according to Hart et al. (*Diabetes, Obesity and Metabolism*, doi.org/ck55).

Using patient records from a cohort of >1,000 older patients with type 2 diabetes in primary care, they found that just under 40% of adults aged  $\geq 70$  years of age with an A1C target  $>7\%$  were likely over-treated according to local guidelines. Many had microvascular and macrovascular complications and comorbidities, used multiple medications, or were considered frail.

The vascular benefits of tight glycemic control have not been proven in older adults, and indeed any benefit may be outweighed by the risk of hypoglycemia, the authors say. As a result, they advise diabetes care professionals to abandon a “one-size-fits-all” approach and consider de-intensifying glucose-lowering treatments when appropriate.

### Culturally Appropriate Diabetes Education Improves Outcomes

A culturally tailored diabetes education program has shown promise at delivering improved outcomes in Bangladeshi immigrants with type 2 diabetes living in New York City. According to Islam et al. (*Clinical Diabetes*, doi.org/ck57), key components of the approach are community health workers and culturally appropriate educational programs delivered in the Bengali language.

Using a randomized, controlled trial design, the authors assigned 176 individuals to the intervention, which was an intensive 6-month diabetes education and coaching program. The control group only received one group session on core aspects of type 2 diabetes and then usual care.

At 6 months, the intervention group experienced a nonsignificant A1C reduction of 0.2% (from 7.8 to 7.6%,  $P = 0.063$ ), whereas A1C in the control group held steady at 8.0%. Members of the intervention group also were much more likely to hit their A1C target than those in the control group (55.2 vs. 42.5%,  $P = 0.035$ ).

Although the overall effects of the intervention were modest, the authors highlighted that community health workers can effectively deliver culturally adapted diabetes education to targeted populations.

## MARKETPLACE .....

### Use of Continuous Glucose Monitoring System Reduces Hypoglycemia Events

Dexcom’s G5 Mobile continuous glucose monitoring (CGM) system can reduce the number of hypoglycemia events in individuals with type 1 diabetes, according to Heinemann et al. (*The Lancet*, doi.org/ck5z). In the 6-month trial, the mean number of hypoglycemia events decreased from 10.8 in the first 28 days to 3.5 in the last 28 days of the study—a reduction of 72%. In comparison, there was a negligible reduction in hypoglycemia in the control group (14.4 vs. 13.7 events).

“We found that the Dexcom CGM system reduces hypoglycemic events through the availability of low glucose alarms and use of trend information, which enables individuals to proactively respond to falling or near-low glucose values,” author Lutz Heinemann said, adding, “This is especially helpful to patients with impaired hypoglycemia awareness or other patients at night, when they are most vulnerable to potentially dangerous hypoglycemic events.”

Meanwhile, Dexcom’s G5 device has gone head-to-head in a trial with Abbott’s Freestyle Libre flash glucose monitor for hypoglycemia events. According to Reddy et al. (*Diabetic Medicine*, doi.org/ck52), participants using Dexcom’s device had hypoglycemia 4.5% of the time at baseline and reduced that to 2.4% after 8 weeks. In comparison, the group using Abbott’s device experienced hypoglycemia for 6.7% of time at baseline and 6.8% after 8 weeks. (Note: both studies were funded by Dexcom but were investigator-initiated.)

### Consumer Wearables Offer Benefits for People With Diabetes

It was bound to happen: the Apple Watch can apparently detect diabetes with an accuracy of 85%. The secret? According to Ballinger et al. (<http://bit.ly/2Fgpxyd>), the key is a neural network approach to find patterns in data from the heart rate monitor in the device. Previous studies have revealed that heart rate variability and patterns are altered in diabetes. The challenge was to uncover the patterns associated with the disease, which the authors have apparently managed to do in patients with known diabetes. Prospective studies will be

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## CODING, REGULATIONS, + REIMBURSEMENTS



### HIGH-DEDUCTIBLE HEALTH PLANS' EFFECTS ON UTILIZATION MAY DIFFER BASED ON MEMBER INCOME

Switching to a high-deductible health plan (HDHP) resulted in an overall reduction in direct health care utilization and costs associated with diabetes, according to Wharam et al. (*Diabetes Care*, doi.org/ck6b). However, for lower-income plan members, this switch resulted in significantly higher expenditures associated with high-severity emergency room visits and increased days of hospitalizations.

The study looked at the effects of HDHPs on various utilization measures, including emergency room visits, hospitalization rates, and total health care expenditures in a large group ( $n = 23,493$ ) of plan members with diabetes who were 12–64 years of age between 2003 and 2012. Specifically, participants were enrolled for 1 year in a low-deductible health plan (LDHP;  $\leq \$500$  in out-of-pocket expenses), followed by 1 year in an HDHP ( $\geq \$1,000$ ) after an employer-mandated switch. Outcomes were then compared to 192,842 diabetes patients who were only offered LDHPs by their employer over the same period.

After switching to an HDHP, emergency room visits, all hospitalizations, and nonemergency hospitalizations fell by 4.0, 5.6, and 11.1%, respectively. Total health care expenditures also decreased by 3.8%. In the overall cohort, adverse outcomes did not change after the switch. However, low-income plan members experienced a 23.5% increase in expenditures for emergency room visits and 27.4% more days in the hospital due to high-severity issues.

The authors say it is concerning that low-income plan members are likely delaying treatment (i.e., missing opportunities for prevention and treatment of less severe complications) in an attempt to avoid costs, only to present later with more severe complications in emergency departments and hospitals. While highlighting that clinicians should be aware that low-income HDHP members might have a substantially increased risk of diabetes complications, they conclude: "Policymakers and employers should consider approaches for protecting such vulnerable populations, including providing health care plans tailored to reducing barriers to care, facilitating medical savings, and educating members about HDHPs."

### BETTER DOSING GUIDELINES NEEDED FOR PRESCRIPTION DRUGS USED IN CHILDREN WITH OBESITY

The labels of common prescription drugs often do not contain any information on dosing in obese pediatric patients, according to Vaughns et al. (*Journal of Clinical Pharmacology*, doi.org/ck6c). This lack of guidance, the authors say, means that common drugs might not be safe or work as intended in this population.

Their analysis looked for any statements relating to obesity in pediatric patients in reviews and materials within the listings of the U.S. Food and Drug Administration (FDA) Amendments Act of 2007 and the FDA Safety and Innovation Act of 2012.

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## MARKETPLACE .....

Consumer Wearables, *continued from p. 125*

needed to prove that the method can also uncover cases of undiagnosed diabetes.

Meanwhile, Oosterom et al. (*Diabetes Care*, doi.org/ck54) report that wearable devices such as Fitbits are likely to be more accurate than subjective assessments such as questionnaires at tracking the physical activity of individuals with type 2 diabetes. Consequently, the authors propose that objective measures of physical activity should be incorporated into standard care for type 2 diabetes, particularly as the approach might serve to increase patients' awareness of physical inactivity.

### CONFERENCE SPOTLIGHT



#### VERY-LOW-CALORIE DIETS MAY INCREASE SHORT-TERM HEART RISKS

“Crash” diets involving very low caloric intake can have dramatic effects on obesity and diabetes symptoms, sometimes rivaling those of drug interventions. However, data presented in February at the CMR 2018 meeting in Barcelona, Spain ([bit.ly/2Fkig0B](http://bit.ly/2Fkig0B)), suggest that, at least in the short term, there may be worrying side effects: a transient deterioration in heart function and a significant buildup of heart fat at 1 week. As a result, researcher Jennifer Rayner suggests that patients considering such a diet should consult a doctor before starting it, particularly if they have a known cardiac problem.

“These diets have a very low calorie content of 600–800 kcal/day and can be effective for losing weight, reducing blood pressure, and reversing diabetes,” Rayner said. “But the effects on the heart have not been studied until now.”

Her study involved 21 obese individuals and used magnetic resonance imaging (MRI) to evaluate the impact of very-low-calorie diets on heart function and fat distribution at various locations in

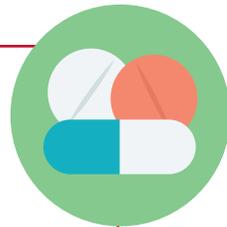
Better Dosing Guidelines, *continued from p. 126*

Specifically, the authors looked for drugs that included dosing guidelines for obese pediatric patients. They identified 89 drug labels listed under the two acts that contained obesity-related keywords. None contained any dosing information related to obesity, although the effects of BMI on drug pharmacokinetics were mentioned in four labels.

“We are making progress in expanding the number of medicines with pediatric labeling, but we need to do more concerning providing dosing guidelines for children with obesity,” author Janelle Vaughns said. “Moving forward, regulators, clinicians, and the pharmaceutical industry should consider enrolling more obese patients in pediatric clinical trials to facilitate the safe and effective use of the next generation of medicines by obese children and adolescents.”

the body. MRI scans were performed at baseline before the diet started and again at 1 and 8 weeks. After 1 week, total body, visceral, and liver fat had dropped by 6, 11, and 42%, respectively. However, heart fat had increased by 44%, and heart function had deteriorated. At 8 weeks, heart fat content and function had improved beyond values at baseline, alongside all the other measures.

Rayner suggests that the sudden drop in calories likely causes fat to be released into blood. This fat is taken up by the heart muscle as energy, but the heart becomes swamped, at least in the initial acute period, worsening heart function. Accordingly, she calls for further research into the impact of this effect, particularly in people with existing heart problems.



## ADA NEWS

### PRIMARY CARE PRE-CONFERENCE SCHEDULED FOR 2018 SCIENTIFIC SESSIONS



#### Diabetes Is Primary

The American Diabetes Association (ADA) Diabetes Is Primary continuing education program will take place on Friday, June 22, 2018, in advance of the 78th Scientific Sessions in Orlando, Fla. This educational initiative, aimed at the primary care community, will offer information needed to improve patient outcomes and enhance patient engagement.

The program will include a panel discussion on new ADA guidelines related to cardiovascular risk, an update on the latest ADA Standards of Medical Care in Diabetes, and presentations on psychosocial care, prediabetes, diabetic kidney disease, and obesity management. Presentations will be delivered in an interactive format, and attendees will be able to follow along on tablets, weigh in on case studies, and access additional resources online.

The \$100 registration fee includes admission, up to 6 continuing education credits, course materials, and lunch. Scientific Sessions attendees can sign up for the Diabetes Is Primary preconference through the online Scientific Sessions registration process. Clinicians not attending the Scientific Sessions can register at [professional.diabetes.org/primary](http://professional.diabetes.org/primary).

### DPP CHARTING AID AVAILABLE



#### Education Recognition Program

The American Diabetes Association (ADA) Education Recognition Program (ERP) has expanded its Chronicle Diabetes electronic charting system to include Diabetes Prevention Program (DPP) charting and report generation that aligns with the Centers for Disease Control and Prevention (CDC) DPP recognition requirements. The charting platform is an easy-to-navigate way to input data and generate CDC-required reports.

ADA is committed to ensuring that the DPP charting platform continues to align with the revised 2018 CDC DPP Standards and the Centers for Medicare & Medicaid Services DPP reimbursement guidelines. The platform is available for a minimal fee to DPP providers regardless of whether they are also ADA-recognized diabetes self-management education and support programs.

To learn more about the platform and its capabilities, please submit a DPP Platform Interest Form (available from [bit.ly/2Clr3O8](http://bit.ly/2Clr3O8)), and an ERP staff member will contact you.

To learn more about ADA's continuing education opportunities, including Diabetes Is Primary events in your community, please visit [professional.diabetes.org/ce](http://professional.diabetes.org/ce).