

# Hot topics in diabetes 2010

We've tapped some of the top researchers, clinicians, and advisers in the field—including our editorial advisory board members—to focus on the most current and useful findings. Use this news to live better with diabetes in 2010 and beyond.

BY Hope S. Warshaw, R.D., CDE

For suggestions and more information, look for these symbols:



Action item



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Free tips

## 1 Losing weight for good

With the right support, weight loss is possible. And it's not just for looks—losing 10–20 pounds improves blood glucose control and may decrease risk of heart and blood vessel disease and diabetes complications. James O. Hill, Ph.D., professor of pediatrics and medicine at the University of Colorado Denver Health Sciences Center, calls attention to early published results of the Look AHEAD (Action for Health in Diabetes) trial funded by the National Institutes of Health. The trial is investigating whether weight loss in people with type 2 diabetes can decrease the amount and severity of heart and blood vessel disease in the long term. “The early results of the trial show that weight loss using intensive and continuing support, meal replacements, and physical activity can be achieved and maintained (albeit with some weight regain over the years) even if people are older, sicker, and have had the disease

longer,” Hill says. “Though it's still too early to tell, the impact on reducing heart and blood vessel disease is promising.”

What seems to work when it comes to weight loss? Hill says meal replacements, portion-controlled meals, controlling calorie intake, and reducing daily food-selection dilemmas are all positive parts of a well-rounded approach (excuse the pun). Continued support is critical, too. Internet-based communication may help people maintain lifestyle and behavior changes and receive coaching, Hill says.



**Action item:** Losing a small amount of weight (10–20 pounds) early in the course of type 2 diabetes and keeping it off can improve blood glucose control and may prevent or delay heart disease, even if you regain some weight later.



**Drop pounds:** Food journals are weight-loss helpers. See how to write it right, *page 64*.

## 2 Treating type 2 early

Findings from three major clinical trials strongly suggest that targeting blood glucose control early in diagnosis is a smart approach. The studies—ACCORD, ADVANCE, and VADT—looked at people who had lived with type 2 diabetes for an average of 10 years. In this group, would intensive glucose control help prevent heart attacks and strokes? Results are still reverberating, but it seems that intensive blood glucose control in high-risk people with long-term type 2 diabetes does not greatly reduce heart attacks and strokes. But that's no excuse to avoid tight control.

“Research on early implementation of tight control is accumulating and repeatedly shows that tight blood glucose control matters most in the first five years after diagnosis,” says John Zrebiec, CDE, of the Joslin Diabetes Center in Boston. After many years of diabetes, however, targets may be slightly higher, says Connie Crawley, R.D., a dietitian with University of Georgia Extension. “If you've had type 2 upwards of 10 years and one or more complications, work with your provider to individualize your glycemic targets,” she says.



**Action item:** Put your game plan in place and strive for excellent control of blood glucose, blood pressure, and blood lipids such as cholesterol from day one. If you've had diabetes for years and less-than-tight control, it's not too late to improve your numbers, but discuss safe blood glucose targets with your provider.



**What should your numbers be?** Target the ABCs of control, *page 53*.

## Balancing carbs

For weight loss and blood glucose control, concentrating on high-quality carbohydrate intake may be the most sensible approach. New research identified by Marion Franz, R.D., CDE, a nutrition and diabetes consultant from Minneapolis, reinforces that people with diabetes (PWDs) benefit from moderate—not low—carbohydrate intake. (Definition of low-carbohydrate intake: Less than 45 percent of daily calories come from carbohydrate sources.)

**Type 2 diabetes:** A large and lengthy weight loss study including PWDs type 2 had participants follow one of four diets. They showed maximum weight loss at six months and some weight regain after two years. Satiety, hunger, and satisfaction were similar with

all four diets. Participants had a tough time reaching either the low- or high-carbohydrate goals, however. By the end of the study, most participants consumed 43–53 percent of their calories from carbohydrate sources—considered moderate carbohydrate intake. “This study reinforces the message: Calories count most” when it comes to weight loss, Franz says. Your healthful eating plan should be one that you can follow for the long haul.

**Type 1 diabetes:** A study analyzing the food intake of people from the intensively treated group of the Diabetes Control and Complications Trial showed that participants who had a mean carbohydrate intake of 56 percent of daily calories had a significantly lower A1C (7.08 percent) compared with an A1C of 7.47 percent for participants whose mean carbohydrate intake was

37 percent of daily calories. “When individuals with diabetes reduce carbohydrate intake, they increase their intake of total fat, which often includes unhealthy saturated fats,” Franz says. “Research shows long-term intake of fats contributes to insulin resistance, while intake of carbohydrate from healthful sources improves insulin sensitivity.”



**Action item:** Work with a registered dietitian to define a practical carbohydrate intake for you. Meal plans with less than 45 percent of daily calories from carbohydrate sources are tough to follow, may not assist with blood glucose control, and can make it difficult to get needed nutrients. To lose weight, aim to limit total calories rather than restrict specific nutrients.

## Improving self-care devices

New tools for insulin delivery are helping people take their medicine as needed, says pharmacist Marty Irons, R.Ph., CDE. Easier-to-use pens, finer needles, and tubeless patch pumps are already on the market; inhaled insulin is under development. AFRESA, a fast-acting inhalable insulin from MannKind Corp., peaks 12–14 minutes after inhaling and is under review by the U.S. Food and Drug Administration (FDA) for use in adults.

Another area of major development is continuous glucose monitoring (CGM). CGM sensors are worn just under the skin and provide nearly constant data on blood glucose trends. “The evolution of CGM is reminiscent of the evolution of meter technology over the past 30 years,” says Fred Williams, Jr., M.D., FACP, FACE, an endocrinologist in Louisville, Kentucky. “CGM technology is advancing, and research is showing people can live safer,

more confident, and healthier lives with it.” CGM devices can help people tighten control with less hypoglycemia. The research has helped PWDs type 1 clear the insurance-reimbursement hurdle—insurers are approving more CGM applications. Williams predicts CGM will be the monitoring gold standard for people with type 1 or insulin-requiring type 2 within several years.



**Action item:** If you use insulin (or other blood glucose-lowering injectables), be sure to check with your health care provider about tools that make taking your meds more comfortable, convenient, and precise. Also be sure your blood glucose monitoring device is up-to-date, especially if you use intensive insulin therapy.



**Less-ouch injections:** For ways to prevent pain, see [DiabeticLivingOnline.com/no-pain](http://DiabeticLivingOnline.com/no-pain).

## Dine on healthful carbohydrate sources (fruit, veggies, whole grains) to eat well and wisely.

### Carb guidelines

These basic starting points are for each meal (3 meals daily). See a dietitian to help you customize your counts.

- Woman desiring weight loss: 30–55 grams carbohydrate
- Woman maintaining weight: 45–60 grams carbohydrate
- Man desiring weight loss: 50–65 grams carbohydrate
- Man maintaining weight: 60–75 grams carbohydrate

**Note:** If you want a snack, limit it to 15 grams carbohydrate (and subtract it from a meal).

## Diagnosing diabetes

An international expert panel now recommends the A1C test—the measure of blood glucose over the past two to three months—to diagnose diabetes in everyone except pregnant women. Until now, diabetes was diagnosed by checking fasting or random blood glucose.

Research revealed that while one or more blood glucose tests can just happen to be elevated, a high A1C is a surer bet that blood glucose has been high for some time and is slowly damaging the body. Here's how A1C results are used to diagnose diabetes:

Higher than 6.5 percent = type 1 or type 2 diabetes  
6.0–6.5 percent = high risk for type 2 diabetes  
People at high risk (having

elevated blood glucose levels is known as pre-diabetes) are encouraged to lose weight (7–10 percent of body weight) and become more active (at least 150 minutes of physical activity each week). That's the best strategy scientists have found to prevent or delay type 2 diabetes.



**Action item:** Urge relatives who are older than 45 or at risk for diabetes to get an A1C blood test. The most reliable A1C tests are done by a lab rather than in a medical office or at home.



**Free tip sheet:** Visit [diabeticlivingonline.com/doctor-checkup](http://diabeticlivingonline.com/doctor-checkup) for a checklist of key lab tests and targets for all PWDs, especially those recently diagnosed.

## Intestinal hormones are a key area of interest for diabetes researchers targeting blood glucose control.

### Holding the salt

The abundance of salt in the processed foods we eat works against us when it comes to maintaining healthy blood pressure, says Chris Smith, The Diabetic Chef. For PWDs, controlling blood pressure is important in preventing, delaying, and minimizing microvascular damage that affects eyes, nerves, and more.

That's why federal guidelines for daily sodium intake are under scrutiny. The recommendation for the general public is 2,300 milligrams daily; for people with high blood pressure, African-Americans, and all adults over age 50, it's 1,500 milligrams daily. Yet nearly all Americans exceed the recommended amounts, consuming an average of 4,000–6,000 milligrams each day. An estimated 70 percent of

Americans, especially older adults and people with high blood pressure (75 percent of PWDs have high blood pressure), could lower their blood pressure by reducing their sodium intake to 1,500 milligrams each day.

"Help is on the way as food manufacturers and restaurateurs are being nudged by health organizations and activists to lower the sodium count of their foods," Smith says. Early deliberations from the 2010 Dietary Guidelines Committee (the report is expected in fall 2010) indicate a target of 1,500 milligrams daily for adults.



**Action item:** Cut down on processed foods, restaurant foods, and using the salt shaker. Eat more fruits, vegetables, and low-fat dairy foods, which boost your potassium count and blunt sodium's effects on blood pressure.

## Enhancing a gut reaction

Pharmaceutical companies are turning to the gut in their search for the next blockbuster blood glucose-lowering drug. "Researchers have discovered a group of intestinal hormones called incretins, which PWDs tend to be deficient in," Irons says. "Incretins are involved with controlling the rise of blood glucose after eating, a problem for many PWDs."

Today there are two classes of medications that focus on intestinal hormones. In the injectable incretin mimetic category is exenatide (Byetta), which must be injected twice a day. Other incretin mimetics are under development, including a once-a-day injection and a once-a-week form of slow-release exenatide that are under FDA review.

The second class of medications is oral dipeptidyl peptidase IV (DPP-4) inhibitors, which slow the breakdown of the gut hormone to let it remain active longer and lower blood glucose levels. These drugs, including sitagliptin (Januvia) and the newly approved saxagliptin (Onglyza), do not cause weight gain.



**Action item:** Ask your provider about medications that help with blood glucose and weight targets.



**Update your meds:** See a typical treatment route and types of medicines used to lower blood glucose, *page 55*.



*Hope Warsaw, a registered dietitian and certified diabetes educator, coauthored Real-Life Guide to Diabetes (American Diabetes Association, 2009).*