

**MEDIA  
PLANET**

MARCH 2010

# Are You At Risk?

YOUR GUIDE TO TYPE 2 DIABETES PREVENTION AND MANAGEMENT







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# MEDIA PLANET

## DIABETES

Publisher: Paul Herron  
paul.herron@mediaplanet.com

Contributor:  
Laura McCafferty

Designer: Carrie Reagh  
carrie.reagh@mediaplanet.com

Photos: ©iStockphoto.com

For more information about supplements in the daily press, please contact:  
Kayvan Salmanpour, 1 646 922 1400  
kayvan.salmanpour@mediaplanet.com

This section was written by Mediaplanet and did not involve USA Today News or Editorial Departments.

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# How Will You Stop Diabetes<sup>SM</sup>?

## Know Your Risk

BY: RICHARD M. BERGENSTAL, MD, PRESIDENT, MEDICINE & SCIENCE, AMERICAN DIABETES ASSOCIATION AND CHRISTINE T. TOBIN, RN, MBA, CDE, PRESIDENT, HEALTH CARE & EDUCATION, AMERICAN DIABETES ASSOCIATION

There are many faces of diabetes—it can affect anyone regardless of age, ethnicity or social status. In type 2 diabetes, often symptoms do not appear until it's too late.

If left untreated, diabetes can lead to deadly complications—including heart disease, stroke, kidney disease, blindness and amputation.

One in five Americans is at risk for developing type 2 diabetes. Nearly 6 million Americans are unaware that they already have the disease. If current trends continue, one in three children born today will face a future with diabetes. The numbers are startling, and the truth is, we must do something to change this future. We must take action to Stop Diabetes<sup>SM</sup>.

Tuesday, March 23rd is the 22nd annual American Diabetes Association Diabetes Alert Day<sup>SM</sup>. This is an opportunity for all Americans, to take charge of their health and join the movement to Stop Diabetes. One way to join the movement is to take the American Diabetes Association's Diabetes Risk Test to determine your risk for type 2 diabetes and to speak with your health care

provider if you are at high risk for developing the disease. The Diabetes Risk Test is available at stopdiabetes.com/usatoday or by calling 1-800-DIABETES.

### Understanding Risk for Type 2 Diabetes

Primary risk factors for type 2 diabetes include being overweight, maintaining a sedentary lifestyle, being over the age of 45 and having a family history of diabetes. African Americans, Hispanics/Latinos, Native Americans, Asian Americans and Pacific Islanders are at an increased risk, as are women who had diabetes during a pregnancy (Gestational Diabetes) or who have had babies weighing more than nine pounds at birth.

Unfortunately, people with type 2 diabetes can go years without realizing that they have the disease. While people with diabetes can exhibit noticeable symptoms, such as frequent urination, blurred vision

and excessive thirst, most people diagnosed with type 2 diabetes do not have these overt warning signs at the time that they develop the disease. Often, type 2 diabetes only becomes evident when people develop one or more of its serious complications, such as heart disease, stroke, kidney disease, eye damage, or nerve damage that can lead to amputations.

### Reduce Your Risk—Take the First Step Today!

Studies have shown that type 2 diabetes can be prevented or delayed by losing just 5-7 percent of body weight through regular physical activity (30 minutes a day, five days a week) and healthy eating. Armed with this information, gather your friends, family, loved ones and/or co-workers and take a 30 minute walk and get started with a healthier lifestyle today!

Together, we can change the future of diabetes. Join the movement

to Stop Diabetes by taking the free Diabetes Risk Test (English or Spanish) at stopdiabetes.com/usatoday or by calling 1-800-DIABETES. Learn how you can get healthier and reduce your risk. Although Diabetes Alert Day is a one-day event, the Diabetes Risk Test and information about healthy eating and getting active is available all year long.

Remember, in order to prevent or treat type 2 diabetes, you must find out first if you, or someone you love, could be at risk.

Special thanks to the WellPoint Foundation for supporting our efforts to "sound the alert" on Diabetes Alert Day this March.

*Richard M. Bergenstal*  
Richard M. Bergenstal

*Christine T. Tobin*  
Christine T. Tobin

American Diabetes Association.  
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# Diabetes: Does That Affect Me?

Diabetes affects almost everyone.

Chances are, if you're reading this, you either have type 2 diabetes, you may be at risk for it, or you know someone who already does.

One in three people born in the United States in 2000 and beyond are expected to develop diabetes in their lifetime, according to the Centers for Disease Control and Prevention. Already, nearly 24 million Americans live with this disease. Another 57 million, or one in five, have pre-diabetes, which means they are on the path to developing type 2 diabetes unless they take real steps to reverse its course.

## What is Diabetes?

Diabetes is a serious illness that takes several different forms: type 2 diabetes, which is the most common; type 1 diabetes, which typically develops during childhood; and gestational diabetes, which can develop during pregnancy.

Most people who have diabetes develop it as adults, and most of them have type 2 diabetes, which accounts

for roughly 95 percent of all cases and which will therefore be the focus of our report. Type 2 diabetes occurs when the body does not produce enough insulin or is not able to use it properly. Insulin helps the body turn glucose (which comes from the sugars and starches in the food we eat) into the energy we need to live. When the body isn't making enough or using it properly, insulin builds up in the blood stream and begins to cause problems in the rest of the body.

## What Causes Type 2 Diabetes?

There is no one, single cause for type 2 diabetes, but there are several factors that contribute to it. First, researchers believe that you must inherit a genetic predisposition for the disease. Then, something in your environment must trigger its development.

Type 2 diabetes starts when the

body develops a resistance to insulin—the body is still producing insulin, but the body does not respond to it properly. Being overweight increases the body's insulin resistance, and being overweight is the most common trigger for type 2 diabetes. Aging and low physical activity also increase insulin resistance.

## How Do I Know If I Am At Risk For Type 2 Diabetes?

Some people are more at risk for diabetes than others. Family history is one risk factor: If your mother, father, sister or brother had diabetes, you have a much higher risk of developing it than those whose family members don't have it.

Some ethnic groups are also at much higher risk. For example, Native Americans, African Americans, Latinos/Hispanics, Asian Americans,

Native Hawaiians, and other Pacific Islanders are more susceptible than other groups. And, as said before, being older, overweight, and inactive also increases your risk for type 2 diabetes.

In fact, the obesity epidemic in the United States has led to an increasing number of children being diagnosed with type 2 diabetes, which leads to them developing complications much earlier in life than they would have had they developed it as adults. The diagnosis of type 2 diabetes was extremely rare in children until the past few decades.

## Why Should I Worry About Type 2 Diabetes?

Diabetes is a chronic and often debilitating disease. If left untreated, it can lead to serious complications, such as blindness, nerve damage, kidney and heart disease, and stroke. Some of these complications can be fatal.

However, type 2 diabetes—and its complications—can often be

prevented or delayed through lifestyle change, which is, losing moderate amounts of weight and increasing physical activity.

But you cannot prevent what you do not know you have. The symptoms of type 2 diabetes are often subtle, and appear gradually. Because of this, they may go unnoticed for years—often until it is too late to change the course of the disease.

The CDC estimates that currently, about 5.7 million Americans have diabetes and do not know it. That means the disease may already be causing damage to their bodies that is difficult or impossible to be reversed.

“Some ethnic groups are also at much higher risk.”

# What Will You Do To Stop Diabetes<sup>SM</sup>?

Every year, the American Diabetes Association issues a wake-up call to remind people of the risks of type 2 diabetes and what they should do to prevent it.

The 22nd annual American Diabetes Association Alert Day<sup>SM</sup> will be held March 23, 2010, focused upon the theme: *What*

*Will You Do to Stop Diabetes? Know Your Risk.*

Because diabetes—also known as the “silent killer”—is often not

diagnosed until 7 to 10 years after it strikes, the American Diabetes Association is encouraging people to join the movement to Stop Diabetes

by taking the Diabetes Risk Test, which will let them know if they are at risk for type 2 diabetes. The good news about type 2 diabetes is that even those who are at high risk can often prevent or delay onset of the disease by taking steps to change their lifestyle.

Why bother? Because diabetes kills.

Early diagnosis is critical. Join the movement to Stop Diabetes by taking the free Diabetes Risk Test at [stopdiabetes.com/usatoday](http://stopdiabetes.com/usatoday) or call 1-800-DIABETES (342-2382).



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## IMPORTANT SAFETY INFORMATION FOR LANTUS®

Do not take Lantus® if you are allergic to insulin or any of the inactive ingredients in Lantus®.

You must test your blood sugar levels while using insulin, such as Lantus®. Do not make any changes to your dose or type of insulin without talking to your healthcare provider. Any change of insulin should be made cautiously and only under medical supervision.

**Do NOT dilute or mix Lantus® with any other insulin or solution.** It will not work as intended and you may lose blood sugar control, which could be serious. Lantus® must only be used if the solution is clear and colorless with no particles visible. **Do not share needles, insulin pens or syringes with others.**

**The most common side effect of insulin, including Lantus®, is low blood sugar (hypoglycemia), which may be serious.** Other possible side effects may include injection site reactions, including changes in fat tissue at the injection site, and allergic reactions, including itching and rash. In rare cases, some allergic reactions may be life threatening.

Tell your doctor about other medicines and supplements you are taking because they can change the way insulin works. Before starting Lantus®, tell your doctor about all your medical conditions including if you have liver or kidney problems, are pregnant or planning to become pregnant, or are breast-feeding or planning to breast-feed.

## INDICATIONS AND USAGE

Prescription Lantus® is a long-acting insulin used to treat adults with type 2 diabetes and adults and children (6 years and older) with type 1 diabetes for the control of high blood sugar. It should be taken once a day at the same time each day to lower blood glucose.

Do not use Lantus® to treat diabetic ketoacidosis.

Lantus® SoloSTAR® is a disposable prefilled insulin pen.

**Please see additional important information on the next page.**

You are encouraged to report negative side effects of prescription drugs to the FDA. Visit [www.fda.gov/medwatch](http://www.fda.gov/medwatch), or call 1-800-FDA-1088.

\*Based on TRx data from IMS Health. National Prescription Audit™ Monthly database, time period from May 2003-Dec. 2009.

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**BRIEF SUMMARY OF PRESCRIBING INFORMATION**

**HIGHLIGHTS OF PRESCRIBING INFORMATION**

**These highlights do not include all the information needed to use LANTUS safely and effectively. See full prescribing information for LANTUS.**

**LANTUS (insulin glargine [rDNA origin] injection) solution for subcutaneous injection**  
**Initial U.S. Approval: 2000**

**INDICATIONS AND USAGE**

LANTUS is a long- acting human insulin analog indicated to improve glycemic control in adults and children with type 1 diabetes mellitus and in adults with type 2 diabetes mellitus. (1)

Important Limitations of Use:

- Not recommended for treating diabetic ketoacidosis. Use intravenous, short-acting insulin instead.

**DOSAGE AND ADMINISTRATION**

- The starting dose should be individualized based on the type of diabetes and whether the patient is insulin-naïve (2.1, 2.2, 2.3)
- Administer subcutaneously once daily at any time of day, but at the same time every day. (2.1)
- Rotate injection sites within an injection area (abdomen, thigh, or deltoid) to reduce the risk of lipodystrophy. (2.1)
- Converting from other insulin therapies may require adjustment of timing and dose of LANTUS. Closely monitor glucoses especially upon converting to LANTUS and during the initial weeks thereafter. (2.3)

**DOSAGE FORMS AND STRENGTHS**

Solution for injection 100 units/mL (U-100) in

- 10 mL vials
- 3 mL cartridge system for use in OptiClik (Insulin Delivery Device)
- 3 mL SoloStar disposable insulin device (3)

**CONTRAINDICATIONS**

Do not use in patients with hypersensitivity to LANTUS or one of its excipients (4)

**WARNINGS AND PRECAUTIONS**

- Dose adjustment and monitoring: Monitor blood glucose in all patients treated with insulin. Insulin regimens should be modified cautiously and only under medical supervision (5.1)
- Administration: Do not dilute or mix with any other insulin or solution. Do not administer subcutaneously via an insulin pump or intravenously because severe hypoglycemia can occur (5.2)
- Do not share reusable or disposable insulin devices or needles between patients (5.2)
- Hypoglycemia: Most common adverse reaction of insulin therapy and may be life-threatening (5.3, 6.1)
- Allergic reactions: Severe, life-threatening, generalized allergy, including anaphylaxis, can occur (5.4, 6.1)
- Renal or hepatic impairment: May require a reduction in the LANTUS dose (5.5, 5.6)

**ADVERSE REACTIONS**

Adverse reactions commonly associated with Lantus are:

- Hypoglycemia, allergic reactions, injection site reaction, lipodystrophy, pruritus, and rash. (6.1)

**To report SUSPECTED ADVERSE REACTIONS, contact sanofi- aventis at 1-800-633-1610 or FDA at 1-800-FDA-1088 or [www.fda.gov/medwatch](http://www.fda.gov/medwatch).**

**DRUG INTERACTIONS**

- Certain drugs may affect glucose metabolism, requiring insulin dose adjustment and close monitoring of blood glucose. (7)
- The signs of hypoglycemia may be reduced or absent in patients taking anti-adrenergic drugs (e.g., beta-blockers, clonidine, guanethidine, and reserpine). (7)

**USE IN SPECIFIC POPULATIONS**

- Pregnancy category C: Use during pregnancy only if the potential benefit justifies the potential risk to the fetus (8.1)
- Pediatric: Has not been studied in children with type 2 diabetes. Has not been studied in children with type 1 diabetes <6 years of age (8.4)

**See Prescribing Information for PATIENT COUNSELING INFORMATION and FDA-approved patient labeling.**

**Revised: 09/2009**

GLA-BCPH-GT2-SEP09

Rx Only



# How To Lose Weight—And Keep It Off!

Five years ago, Herman Kemp weighed 454 pounds, had high blood pressure and elevated cholesterol levels. He was also diagnosed with pre-diabetes.

**B**ut fad diets had gotten him nowhere. Diet after diet failed to help him keep off any significant amounts of weight; one diet even caused him to gain.

Finally, his doctor told him: “I don’t believe in fad diets, but I do believe in lifestyle change.”

He presented Kemp with a reduced calorie meal plan and told him to chase it with a daily dose of exercise. His wife Christa, who also wanted to lose weight, prepared the meals. She bought a scale for measuring portion sizes and learned how to properly count calories. Together, they began walking every night for 10 to 15 minutes.

By starting out gradually, the

Kemps followed rule number one for a successful weight loss and exercise plan: Set realistic goals. After six months, Herman Kemp lost 70 pounds. His wife lost 30.

The American Diabetes Association’s website reminds people that even losing small amounts of weight (just five to seven percent of body weight) can lower blood glucose, blood pressure and cholesterol levels. But it’s important to keep it off, which is often the hardest thing to do.

“The key is consistency,” said Christa Kemp. “That’s what it takes. With fad diets you do it for a while and then stop.”

But by counting calories, maintaining reasonable portion sizes and

increasing exercise goals as they were able, the Kemps not only lost more weight, they kept it off—for five years and counting.

Their 15 minutes of walking gradually developed into longer walks and then runs, said Christa. She now runs three miles twice a week, does pilates and weight training. He runs eight to ten miles four times a week and weight trains at the gym three times a week.

Today, both Kemps are down to much healthier weights. Herman is holding steady at 222 pounds, and Christa, who was 282 when she started, is down to 182 pounds.

Most importantly, Herman no lon-

ger has high blood pressure. Neither he nor his wife have high cholesterol anymore. He has stopped taking all medications. And his blood glucose levels? They’re normal.

And, there’s one other benefit they hadn’t initially consid-

ered: Their 13-year-old daughter is learning what an appropriate food portion looks like.

“We don’t tell her she can’t have a piece of cake for dessert,” Herman said. “We just show her what size it should be.”

“Their 15 minutes of walking gradually developed into longer walks and then runs. She now runs three miles twice a week, does pilates and weight training.”

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# Blood Glucose Monitors: Something for Everyone

Monitoring blood glucose levels is important when you have type 2 diabetes, as you try to keep your levels in a healthy range.

**T**hanks to advances in technology, there are now numerous options available to people with diabetes to help them maintain good control.

Whether you have poor vision, memory problems or work in dim lighting, you should be able to find a blood glucose monitor that works for you. Before choosing a meter, however, it's important to consult with your health care team to make sure you are selecting the meter with the best features for you, and with your insurance company to make sure you know what's covered.

Blood glucose meters are small devices (usually about the size of a cell phone) that "read" your glucose

level and display it on a screen. Testing blood glucose involves three important components: a lancet, a test strip, and the meter itself.

The lancet is used to prick the skin (usually on the side of a fingertip) and draw a droplet of blood, which is then touched to the end of the test strip. Chemicals on the strip react with the glucose in the blood, measuring its concentration. When the test strip is placed in the meter, a number appears on the meter screen, giving you the reading.

For those who have poor vision, meters are available with larger buttons and audio instructions. Meters that give results in Spanish are also available.

Meters vary in size and features; some give readings in just a few seconds, some allow for alternate site testing, some include storage for lancets and test strips. All meters can store readings and download them to a computer. There are even meters that will send the results via text message to a parent's or other caretaker's cell phone. One of the biggest variables among meters is the cost of their test strips, with strips for some meters costing twice as much as others.

## Continuous Glucose Monitoring

The latest development in measuring blood glucose levels is continuous glucose monitoring (CGM), which uses an under-the-skin sensor

to measure glucose levels and transmit the results to a handheld receiver every few minutes. The benefit of using a CGM is that you can see the trend in whether your blood glucose levels are going up or down, not just what the level is at a single moment. And the CGM can tell you what your glucose is doing at all hours—especially overnight. All CGMs include warning systems that alert you when blood glucose levels are going too high or too low.

CGMs do not eliminate the need for regular glucose testing, since the device must be calibrated with a standard glucose meter. And CGMs and their supplies are expensive, and are not covered by many insurance plans. Even if you don't use a CGM on a permanent basis, some doctors like to have their patients use a CGM for at least a few weeks, so

both the patient and the doctor can get a better idea of that patient's daily glucose ups and downs, and make appropriate adjustments to treatment.

“Blood glucose meters are small devices (usually about the size of a cell phone)...”

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# Managing Your Type 2 Diabetes

Once you receive a diagnosis of type 2 diabetes, it's important to begin treatment immediately. When properly managed, diabetes need not interfere with leading a normal life.

**H**owever, if left untreated, diabetes can cause irreversible damage to the body and ultimately prove fatal.

## Your Diabetes Health Care Team

The first step in treating type 2 diabetes is to establish a health care team to help you develop a comprehensive treatment plan. Everyone's needs are different, so your team and treatment plan might not look the same as that of another person who has diabetes. Speak to your primary care physician about who should be on your team.

Your team may include some or all of the following:

- You: You are the most important member of the team as you are the

one who must carry out the steps in your treatment plan.

- Primary care doctor: This can be a family practice physician, endocrinologist or internist. Just be sure that the doctor has a lot of experience working with patients who have type 2 diabetes.
- Certified Diabetes Educator: A professional with special training in caring for people with diabetes. This person can help you with the day-to-day aspects of living with diabetes.
- Registered Dietitian: This person can help you figure out a meal plan based on your weight goals, lifestyle and medications.

- You may also wish to include an exercise physiologist or social worker, and you'll want to let your eye doctor and dentist know that you have diabetes.

Taking good care of your diabetes means monitoring and addressing a number of health factors:

## Blood Glucose Levels

It's important to check your blood glucose levels on a regular schedule. How often you should check depends on how you are managing your diabetes. The goal is to keep your blood glucose levels as low as possible without causing them to go too low.

Keeping blood glucose levels as low as possible can help prevent or

delay complications, such as kidney, eye and nerve disease. Blood glucose levels are kept under control through a combination of diet and exercise, and, in some cases, insulin injections and medications.

In addition to checking your blood glucose levels on your own, you should also get an A1C test at your doctor's office two to four times a year. A1C gives you an overall picture of your average blood glucose levels for a period of two to three months; A1C can also be reported as estimated average glucose, or eAG. The American Diabetes Association recommends that most people with diabetes try to keep A1C levels at or below seven percent, or eAG below 154 mg/dl.

## Blood Pressure and Cholesterol Levels

Did you know that 75 percent of people with diabetes also have high

blood pressure? Many also have high cholesterol. These are two leading risk factors for heart disease and stroke. In fact, people with diabetes are two to four times as likely to have a stroke or die from a heart attack as people who don't have diabetes.

## Diet and Exercise

Many people who have type 2 diabetes are overweight or obese. Numerous studies show that reducing weight and increasing physical activity can help reverse the course of diabetes and provide other health benefits. Consult your health care team for a plan that fits your goals.

## Smoking

Finally, if you are a smoker, quit. Smoking not only raises your risk for lung cancer, it doubles your risk for heart disease and increases your risk for other diabetes-related complications, such as vision and nerve problems.

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# Dental And Vision Health: Yes, Diabetes Affects These, Too!

Did you know that diabetes affects just about every part of your body—including your eyes and teeth?

In fact, since as many as one-fourth of people who have diabetes don't know they have it until complications arise, it could well be your dentist or eye doctor who first clues you in to the symptoms that could lead to a diabetes diagnosis. Problems such as gum disease or vision problems could be the first signs that

something has gone amiss.

## Vision Problems

Problems with the eyes are very common among people with diabetes, which is the leading cause of blindness in the United States. However, most people with diabetes have only minor problems with their eyes. If blood glucose

levels are kept within the target range, vision problems and other diseases that affect the eye can often be prevented.

If not properly managed, however, diabetes can cause serious eye problems. People with diabetes are more likely to suffer from glaucoma, which happens when pressure builds up in the eye and pinches off the vessels that carry blood to the retina and the optic nerve, causing vision loss. The risk for developing this disease goes up with age as well as the length of time that you have had diabetes. Glaucoma can be treated with surgery or medications to reduce the pressure.

People with diabetes are also more likely to develop cataracts, in which the clear lens clouds over, preventing clear vision and causing glare. Cataracts develop faster and at a younger age in people with diabetes than in those who don't have diabetes. The problem is treated by removing the lens, or getting a transplant, when severe.

The most direct link between diabetes and vision problems is due to damage to the retina called retinopathy. There are two main kinds of retinopathy: nonproliferative, which can have no symptoms and can range from mild to severe, and proliferative, which is the most severe form of the disease.

In nonproliferative retinopathy, blood vessels become blocked and can cause leaking in the part of the eye needed to focus (the macula). This can become serious and lead to vision loss, although in most people this type of retinopathy remains mild and does not require treatment.

Proliferative retinopathy is more serious, and can lead to blindness. In this case, vessels become so blocked that they close off entirely and new blood vessels begin to grow in the retina. These vessels tend to be weak, and can break and leak blood into the eye, clouding vision. Scar tissue can also grow, eventually causing the retina to detach.

Most people with diabetes will eventually develop at least mild retinopathy. The longer you have diabetes, the more likely you are to get it. Some people are also genetically more likely to get it than others. But keeping blood glucose levels within target range greatly reduces the risk of developing the more severe forms of the disease. Controlling blood pressure also helps.

If you do develop vision-threatening retinopathy, there are numerous treatments that can ease, and in some cases, reverse it. One treatment makes tiny burns on the retina using a special laser to seal blood vessels and prevent them from leaking, but it can only be used in the early stages of the disease. Once too much leakage or detachment occurs, surgery may become necessary to remove scar tissue and cloudy fluid from the

eye. In severe cases, it is also possible to surgically reattach the retina, but this treatment is difficult and only works in about half of all cases.

Because retinopathy can often develop without any obvious symptoms, getting your eyes checked regularly is important. Most people with diabetes should get a dilated eye exam every year.

## Dental Problems

Dental problems—particularly gum disease—are also quite common among people with diabetes. What's more, the relationship between diabetes and gum disease appears to be a "two-way street." That is, having diabetes puts you at higher risk for gum disease, but having gum disease likewise makes it harder to keep glucose levels under control and may contribute to the progression of diabetes.

Gum disease is more common in people with diabetes because high glucose levels in the blood make it harder for the body to fight off infections in general, including bacterial infections in the mouth. People with uncontrolled blood glucose levels are therefore more likely to lose their teeth and develop other oral problems, such as thrush and dry mouth, cavities, and ulcers.

To prevent dental problems, including gum disease, people with diabetes should work to keep blood glucose levels in the target range, brush and floss regularly, and see a dentist every six months for a check-up.



Eye exams can detect early signs of serious health conditions, like diabetes. That's why VSP® Vision Care doctors focus on your eyes and your overall wellness.

Visit the VSP Diabetes Discovery Center on [vsp.com/ada](http://vsp.com/ada).





# Pre-Diabetes:

## Catch It Early And Stop It!

David Toyoshima knew something wasn't right when any attempt to walk up stairs left him winded. At 5'8" and 213 pounds, eating a diet of junk food and sugary colas, he was pretty sure the faintness he felt had something to do with his blood glucose levels.

A trip to the doctor told him he was right: You have pre-diabetes, his doctor told him. Stop eating fast food. Lose weight. And exercise.

Pre-diabetes is a state that occurs when blood glucose levels climb higher than normal, but not high enough to result in a diagnosis of type 2 diabetes. A landmark government study called the Diabetes Prevention Program (DPP) found that people in the pre-diabetic stage could actually reverse the course of their disease and reduce their chances of developing type 2 by up to 58 percent if they lost

weight and increased physical activity levels.

Toyoshima, whose mother had died of kidney failure caused by type 2 diabetes, took his doctor's advice to heart.

"I really went cold turkey," he said. He stopped drinking sugary sodas—immediately. Gave up fast food. And began an exercise program.

"I started eating a sensible lunch: chicken with no skin, vegetables, moderate portions of everything."

For dinner, he ate fish or chicken. Every day after work, he took his beagle for a long walk along the beach near his southern California home. To keep himself motivated, he measured his blood glucose levels four times a day. In less than three months, he dropped down to 170 pounds and his blood

glucose levels fell from over 130 to under 100—normal.

Toyoshima proved what the DPP had already shown: Even in those at highest risk—people with a family history of diabetes and blood glucose levels well above normal—it is possible to halt the disease in its tracks, if you are willing to change your lifestyle.

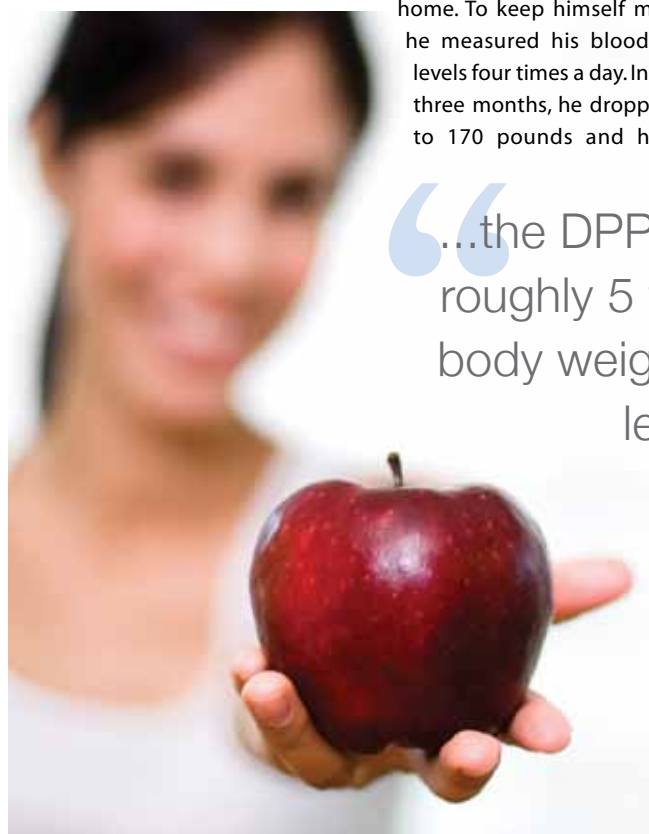
Specifically, the DPP showed that losing roughly five to seven percent of your body weight and exercising at least 150 minutes per week could keep blood glucose levels from rising to the diabetic range in most of the participants. People like Toyoshima are living proof that it works.

Three years later, weighing in at 163 pounds, Toyoshima continues to eat a reasonable diet and to walk for an hour or two several days a week. He no longer feels the hunger pangs he did at first, and no longer craves fatty or fried foods.

What saved him, he said, was determination.

"I did it because it killed my mother. I said, 'I'm not going to let it happen to me.'"

“...the DPP showed that losing roughly 5 to 7 percent of your body weight and exercising at least 150 minutes per week could keep blood glucose levels from rising to the diabetic range in most of the participants.”



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# Panel Of Experts



**PAUL EDELMAN, MD**  
Professor of Medicine  
University of California San Diego  
Veterans Affairs Medical Center



**KRIS SWENSON, RN, CDE**  
Diabetes Management & Training Centers, Inc.



**ROGER H. PHELPS, OD, FAAO, CDE**  
Optometrist  
OjaiEyes Optometry



**SHERI COLBERG, PHD, FACSM**  
Exercise Physiologist

**Q:** How important is it to monitor blood glucose levels throughout the day?

**A:** Your glucose meter is your personal laboratory in the palm of your hand. Every person living with diabetes uses a glucose meter. Knowing your blood glucose level in relation to eating, exercising, sleeping, concurrent medical illnesses, stress, medications, and all of the other factors that can affect glucose levels is invaluable.

Home glucose monitoring (HGM) is not just pricking your finger and writing the result in a logbook for your health care provider to look at during your next appointment. HGM is knowing what your individual blood glucose goals are and doing something about abnormal values. One of the biggest barriers I see as a diabetes specialist is that people with diabetes are not educated about how to act on their results, leading to frustration, inaction and chronic poor control.

Consider this challenge: If you are not content with your A1c, take a look at the average blood glucose on your meter. My meter gives me an average for the last two weeks, as well as the number of times I've tested in those time periods. If you'd like to use your meter more effectively, try to get the 14 day average inside your goal blood glucose value window. As for frequency, the key is to test at times that will give you information on how your medications are working and/or how your daily lifestyle is affecting your control.

For more information see [www.tcoyd.org](http://www.tcoyd.org).

**Q:** Does everyone who has diabetes need to take insulin?

**A:** No, not all people with diabetes must take insulin. Insulin is used when the beta cells in the pancreas are not able to make enough insulin themselves to meet demand in the body.

A person with type 1 diabetes, an autoimmune disease, must take insulin to survive because the beta cells in their bodies have been destroyed. But most people with diabetes have type 2 diabetes, a genetic disease fueled by living in today's world of less physical work to survive, higher stress and plentiful food. People who have type 2 diabetes do not necessarily have to take insulin.

For many, type 2 diabetes begins in pre-diabetes, when the beta cells make excessively high levels of insulin to compensate for insulin resistance. The demand for high insulin levels puts extra work on these beta cells and they can become exhausted.

Many new oral agents help lower the body's need for insulin or kick the beta cells to make more insulin. But eventually, this may not be sufficient and many people with type 2 diabetes will need to add insulin to these agents to keep their blood glucose levels in a safe range. In that case, insulin is used as a supplement to the insulin their bodies currently make.

**Q:** If I have diabetes, what can I do to protect my eyes?

**A:** Not many years ago, most people diagnosed with diabetes assumed they would eventually lose their eye sight. However, with today's recent advances in research and treatment, most diabetic-related blindness is preventable. Here are some tips to make sure your eyes stay healthy:

1. Get a dilated eye exam every year from an eye doctor you've established a relationship with. Your eye doctor can detect tiny changes in your eyes before you experience any problems with your vision. If you wait until you have vision problems, it may be too late for effective preventative treatment.
2. Keep blood pressure under control. High blood pressure can impact the blood vessels in your eyes.
3. Don't smoke. If you do smoke, quit. Smoking increases your risk of diabetic eye disease.
4. Keep your blood glucose levels within your target range.

I've had diabetes for more than 20 years, and I still have great vision. You can, too. Although your healthcare team plays an important role in your overall care, 90 percent of your diabetic control is your responsibility. Properly learning how to handle your diabetes can lead to a healthier and longer life.

**Q:** Is it true people with diabetes can't eat certain kinds of foods?

**A:** Having diabetes does not mean you're subject to a restrictive diet that deprives you of certain foods. A healthy diet for someone with diabetes is the same as a healthy diet for anyone else. It is low in fat, moderate in salt and sugar, with meals based on whole grain foods, lean meats, vegetables and fruit.

Being smart about what you eat—and how much—is especially important, whether your goal is to lose weight or avoid gaining it. For example, people taking blood glucose-lowering medication (insulin or oral medications) may experience hypoglycemia or low blood sugar. Correcting low blood sugar immediately with fast-acting carbohydrates is very important; however, it's not the time to 'binge' on candy, cookies and other high calorie, high fat, high carbohydrate foods. These 'treats' take longer to raise blood sugar than pure glucose, such as glucose tablets, liquid or gels, and usually contain calories that do not raise blood sugar levels effectively. You're almost certain to eat too much of them while waiting for your blood sugar to rise.

When you have diabetes, your nutritional needs are the same as everyone else's—no special foods or complicated diets are necessary. Balancing healthy food choices, moderation, and regular mealtimes is the way to go.



# Testing For Type 2 Diabetes: Am I At Risk?

Are you 45 years old or more? Do you have a family history of diabetes? Do you have high blood pressure? Are you overweight for your height? Are you part of an ethnic or minority group that is at high risk for diabetes?

If you want to find out your risk for developing type 2 diabetes, the American Diabetes Association offers the Diabetes Risk Test that asks you a series of questions to help determine both your level of risk and the individual risk factors you may need to address, such as being overweight.

Take the Association's risk test at [stopdiabetes.com/usatoday](http://stopdiabetes.com/usatoday) or by

calling 1-800-DIABETES (342-2383).

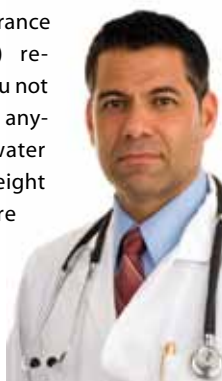
## Do I Have Type 2 Diabetes?

Whether your risk is high or low, there's only one sure way to find out whether you have type 2 diabetes: Get tested.

There are several different tests your doctor can use to tell you whether your blood glucose levels are normal, pre-diabetic, or call for a diagnosis of diabetes. However, each

uses different "cutpoints," or numerical results that indicate where your health stands. Your doctor will help you understand the results.

There are three tests that can be used to diagnose diabetes or pre-diabetes. Two of them, the fasting plasma glucose (FPG) and the oral glucose tolerance test (OGTT) require that you not eat or drink anything but water for at least eight hours before the test. A third, the A1C test, does not.



## Gastroparesis

- Gastroparesis is a type of neuropathy (nerve damage) in which food is delayed from leaving the stomach.
- This nerve damage can be caused by long periods of high blood sugar.
- Delayed digestion makes the management of diabetes more difficult.
- It can be treated with insulin management, drugs, diet, or in severe cases, a feeding tube.

takes too long to empty its contents (delayed gastric emptying). The vagus nerve controls the movement of food through the digestive tract. If the vagus nerve is damaged or stops working, the muscles of the stomach and intestines do not work normally, and the movement of food is slowed or stopped.

Just as with other types of neuropathy, diabetes can damage the vagus nerve if blood glucose levels remain high over a long period of time. High blood glucose causes chemical changes in nerves and damages the blood vessels that carry oxygen and nutrients to the nerves.

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# Managing Multiple Medications

Having diabetes often means taking more than one medication, perhaps more than once a day.

People who have type 2 diabetes may take insulin, medication for high blood pressure and high cholesterol, and/or glucose-lowering drugs.

In addition, many people may take medications such as antidepressants, pain relievers, laxatives, birth control pills, and vitamin supplements.

Taking lots of medication, prescribed by a number of different doctors, can also be potentially dangerous, due to possible drug interactions. Since each of your health care providers may not know what the other is prescribing, you need to make sure that every doctor you see knows about everything you're taking.

The easiest way to do this is to keep a list of all the medications you are taking, and what you are taking them for. The list should also include the dosage for each medication and the brand name, as well as the generic name, of the drug. Many pharmacies can help make this easier by printing out a list for you of everything you are getting from that pharmacy. Don't forget to include over-the-counter drugs and drugs that you might take only on occasion. Even nutritional supplements can sometimes interact with medica-

tions, so these should go on the list as well.

## Who should have this list?

Any health care provider who prescribes medication to you should have a copy of the list, as should your pharmacist. If you have a Certified Diabetes Educator (CDE) or someone who advises you on food supplements, they should also be aware of what you take. Finally, one or more family members should have a copy of the list in case of a medical emergency. Keep a copy of this list some-

where in the house where it can be easily located.

## Organization is key

Remembering when to take what—and whether or not you took it—is also a vital component of good medication management. If you don't already have one, pick up a pillbox that lists each day of the week and has compartments for different times of the day.

Once a week, fill the box with the appropriate pills for each day and time of day. This is the safest and easiest way to ensure that you don't skip pills or double dose them because you can't remember if you took them or not. Be sure to keep the box in a place

where you can't miss it as a reminder to take your medication (though out of reach of small children).

“Once a week, fill the box with the appropriate pills for each day and time of day.”

## Sleep Apnea: Need Not Be Scary

“Many men with diabetes also suffer from obstructive sleep apnea or OSA, a breathing disorder where the airway is blocked when the mouth and throat relax during sleep, often for more than 10 seconds.

Are you ever jolted awake by the sound of your own snoring? Loud snoring is a sign that you may have OSA. Your family or partner may make jokes about snoring at your expense but sleep apnea is no laughing matter. Sleep apnea

can be dangerous to your health. Untreated sleep apnea can increase your risk of having high blood pressure and even having a heart attack or stroke. Sleep apnea can also increase the risk of diabetes and the risk for work-related accidents and driving accidents.

Although anyone can have sleep apnea, the greater risk factors include:

- Being male
- Smoking
- Being Overweight or obese

If you fit this profile, you should talk to your health care provider about taking a test to determine if you suffer from sleep apnea.”

© 2009 American Diabetes Association

## Depression


The rate of depression in people with diabetes is much higher than in the general population. Women experience depression about twice as often as men.

The risk of depression increases in women with diabetes. Many hormonal factors may contribute to the increased rate of depression in women—particularly such factors as menstrual cycle changes, pregnancy, miscarriage, postpartum period, pre-menopause, and menopause. Many women also face additional


stresses, such as responsibilities both at work and home, single parenthood, and caring for children and for aging parents.

Previous studies have shown individuals who are insulin-resistant may have higher serotonin concentrations and may be more prone to depression and even suicide. Women with diabetes may be more likely to suffer depression because of the clinical diagnosis.”

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- Lower blood pressure<sup>2</sup>
- Improve insulin sensitivity and glucose control<sup>3,4</sup>
- Increase cardiovascular function<sup>5</sup>

**Symptoms of sleep apnea include:**

- Loud snoring
- Choking or gasping during sleep
- Extreme sleepiness during the day
- Fatigue
- Morning headaches
- High blood pressure

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1 Einhorn et al. *Endocr Pract* 2007  
2 Becker et al. *Circulation* 2003  
3 Harsch et al. *Am J Respir Crit Care Med* 2004  
4 Babu et al. *Arch Intern Med* 2005  
5 Kaneko et al. *New Engl J Med* 2003

**RESMED**



American Diabetes Association.

# ALERT! DAY

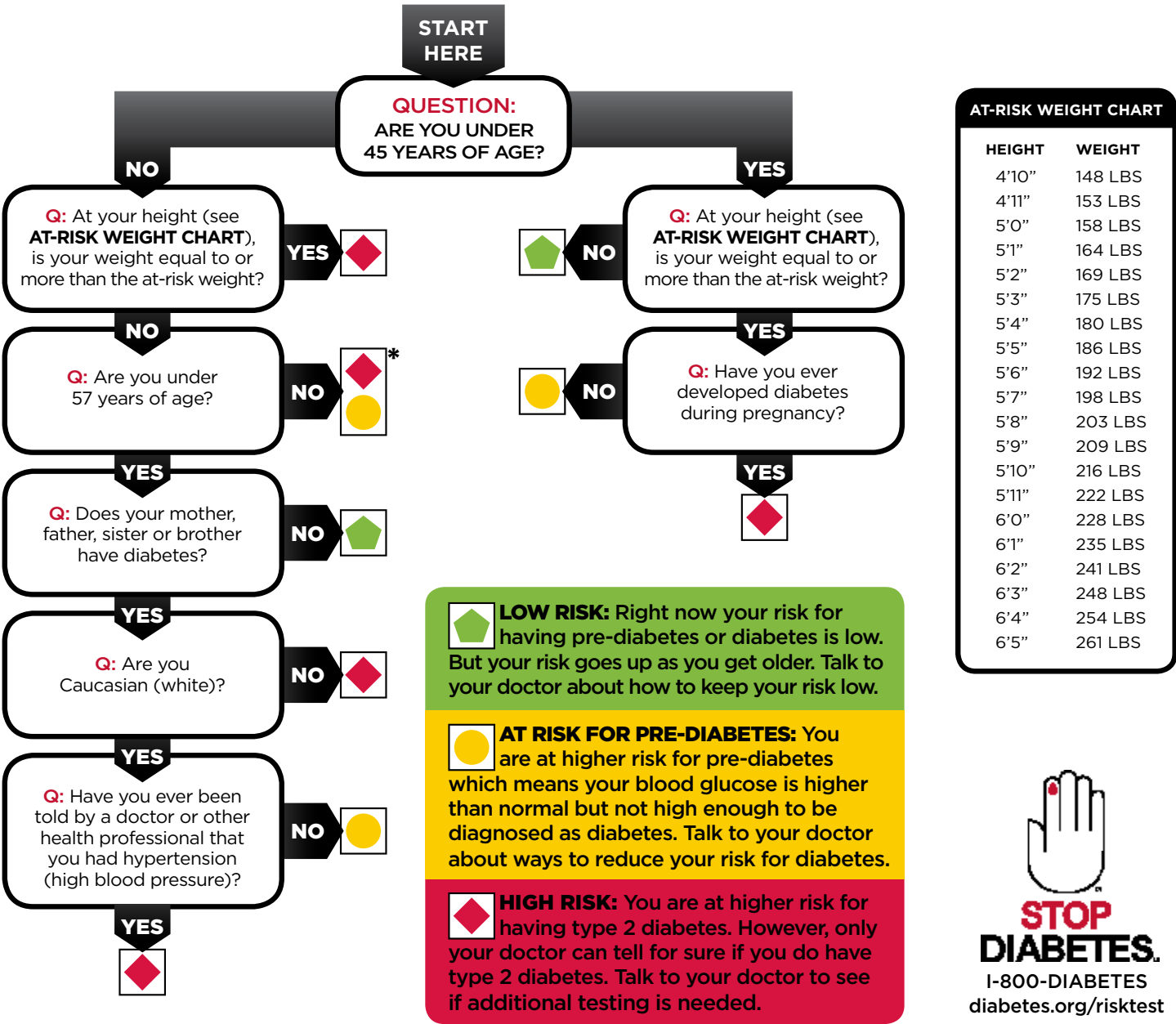
## ARE YOU AT RISK?

### DIABETES RISK TEST

Calculate Your Chances for Type 2 or Pre-Diabetes

The American Diabetes Association has revised its Diabetes Risk Test according to a new, more accurate statistical model. The updated test includes some new risk factors, and projects risk for pre-diabetes as well as diabetes.

This simple tool can help you determine your risk for having pre-diabetes or diabetes. Using the flow chart, answer the questions until you reach a colored shape. Match that with a risk message shown below.



\*Your risk for diabetes or pre-diabetes depends on additional risk factors including weight, physical activity and blood pressure.



# It's Complicated: What Happens When Diabetes Goes Untreated

Getting a diagnosis of diabetes can be a bit overwhelming at first. There's a lot to learn about how high blood glucose levels can affect your body and what you need to do to keep your levels under control.

**W**hen left untreated, diabetes can lead to serious complications. Some of them—such as heart disease, kidney failure or stroke—can be fatal. Others, such as nerve damage, can be quite painful.

What's more, diabetes-related complications don't affect everyone in the same way. For example, women are more likely than men to suffer from depression; African Americans are two to five times more likely to experience kidney disease and 50 percent more likely to develop vision problems related to diabetes; and men are more likely to have problems with sexual function.

However, many diabetes-related complications can be prevented or delayed through lifestyle changes and proper treatment or management. Here are some of the most common diabetes-related complications, and what you can do to help prevent them:

## Heart Disease, Stroke and Associated Risk Factors

People with diabetes are more than twice as likely as people without diabetes to have heart attacks or strokes. They are also two to four times more likely to die prematurely from heart disease.

One of the biggest risk factors

for heart disease—high blood pressure—is also very common in people with diabetes. Roughly three fourths of all adults with diabetes have it. Likewise, high cholesterol levels are commonly found in people with type 2 diabetes.

The first step in preventing heart disease and its associated risk factors is to know your numbers: Have blood pressure and cholesterol levels tested regularly. The American Diabetes Association recommends that most people with diabetes keep blood pressure levels below 130/80 mmHg.

Cholesterol is measured as “good” cholesterol (HDL), which protects your heart, and “bad” cholesterol (LDL), which can lead to heart disease. A good target for HDL would be 40 mg/dl or above for women; 50 mg/dl for men. The Association recommends that people with diabetes keep LDL levels below 100 mg/dl, and that people with diabetes who also have signs of heart disease

maintain LDL levels below 70 mg/dl.

Increased physical activity and proper nutrition, such as eating a low-fat, low-salt, high-fiber diet, are two of the best ways to lower blood pressure and cholesterol levels and prevent heart disease and stroke. However, this may not be enough for some people and medications may become necessary.

## Kidney Disease

When excess glucose builds up in the blood, it makes it harder for the kidneys to do their job—filtering waste products from the food we eat out of our blood. Over time, this damages the kidneys and causes them to leak. Eventually, it can cause them to fail completely.

The best way to protect the kidneys from failing is through tight control of blood glucose levels. When diagnosed early, kidney decline may be stopped, and possibly even reversed. However, once the kidneys fail, it's necessary for patients to undergo di-

alysis (in which a machine cleans the patient's blood) or transplantation to survive.

Diabetes is the leading cause of End Stage Renal Disease (ESRD), or kidney failure; it currently accounts for 44 percent of all new cases. However, a study by the Centers for Disease Control and Prevention noted that renal failure has been declining steadily in recent years, possibly due to better treatment, such as more tightly managing blood glucose levels.

## Nerve Damage

High levels of glucose in the blood can also lead to nerve damage, known as neuropathy. This causes a wide variety of symptoms, from tingling sensations in the hands and feet to problems digesting food. At its most extreme, nerve damage can lead to amputating the lower limbs.

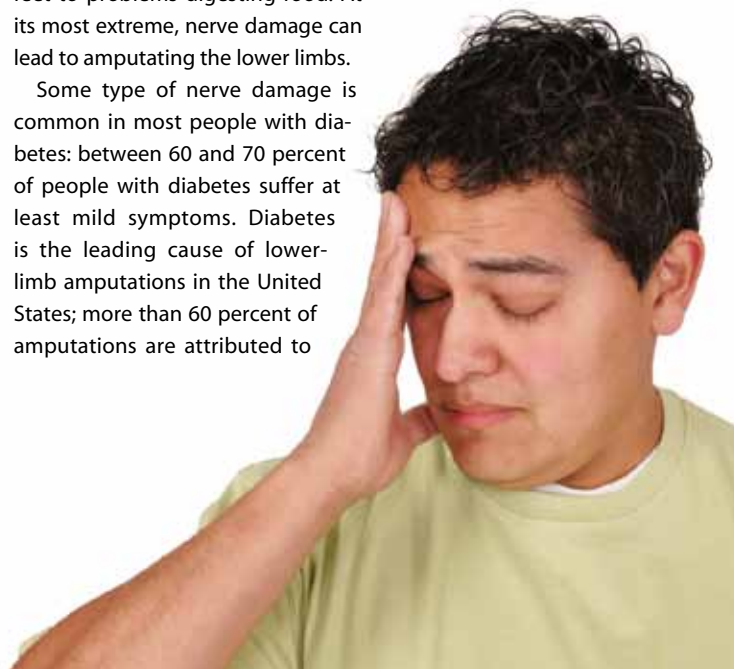
Some type of nerve damage is common in most people with diabetes: between 60 and 70 percent of people with diabetes suffer at least mild symptoms. Diabetes is the leading cause of lower-limb amputations in the United States; more than 60 percent of amputations are attributed to

this disease, a rate 25 times higher for people with diabetes than for those without.

The best way to prevent neuropathy is to keep blood glucose levels in your target range. You should also have your feet checked regularly for problems. A good rule of thumb is to have your doctor check your feet at every visit, since symptoms often go unnoticed.

## Other Complications

Diabetes is also the leading cause of blindness and can cause numerous vision and dental problems, as well as depression and sexual dysfunction in both men and women. It can also make you more susceptible to illness and slow the healing process.



“Some of them—such as heart disease, kidney failure or stroke—can be fatal. Others, such as nerve damage, can be quite painful.”



## DIABETIC FOOT PAIN?



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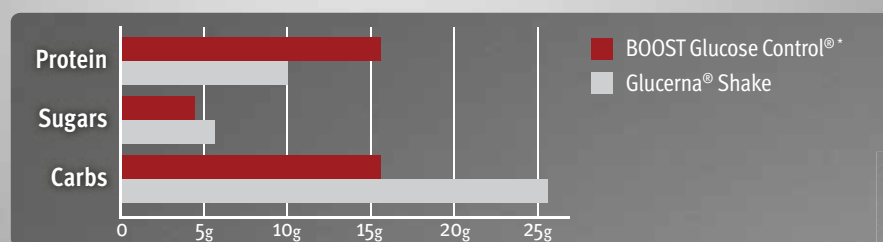
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