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Boston Public Health Commission

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Diabetes: Nothing sweet about 'the sugar'

A large part of Sharon Molden didn't want to believe she had diabetes.

She had all of the risks.

It wasn't until she turned 40 years old that she started to take seriously her doctor's warnings. It wasn't until four years later, when her diabetes grew from borderline status to the full-blown package, that Molden's sense of denial surrendered to a stronger sense of staying alive.

The final straw came one night when she was driving southbound on Interstate 93 from Boston to her home in East Taunton. All of a sudden, her vision became fuzzy.

The only thing she could see, and that was barely, were the red tail-lights of vehicles

ahead, and those red spots were shaped in a pattern that resembled a Christmas tree.

"Everything was blurry," Molden recalled. "I was alone and driving a car and I couldn't see. I couldn't even see the license tags in front of me. I could have killed someone."

Or herself.

In a sense, her denial in having one of the industrialized world's most deadly diseases underscores a silent reality — of all the diseases, diabetes is the least understood and respected.

Dr. David Nathan, director of the Diabetes Center at Massachusetts General Hospital, doesn't sugarcoat what he considers an "enormous epidemic."

"Type 2 diabetes is arguably the single greatest epidemic that we will face this century," he said.

He is not exaggerating.

According to the American Diabetes Association, almost 21 million people in this country have diabetes. Roughly 6 million of them are unaware that they have it. Type 2 diabetes is the most common.

What's worse is that many experts maintain that the death rate from diabetes is vastly under-counted. It is the sixth leading cause

of death in the United States. Yet, diabetes is a significant risk factor in cardiovascular disease, the nation's number one killer.

Unlike heart disease, cancer and other life-threatening illnesses, which are decreasing in number, the incidence of diabetes is rising. Dr. Nathan estimates 1.5 million new cases a year.

"Diabetes is a growth industry," Dr. Nathan said. "Even without considering how many people the disease kills every year, it causes misery for those still alive."

Fortunately for Molden that night on

the highway, she was able to pull over to the side of the road. She made it home, but it marked the last time that she would ignore her blood sugar level.

It was a long time in coming.

Molden's mother died six months ago.

"I watched," Molden said, "what had been a seemingly very healthy black woman have five strokes, lose vision in one eye and hearing in one ear. She was often very disoriented. She lost toes on both feet."

Her kidneys failed four years ago. From then on, it was a dialysis machine three times a week. Because of her age and medical complications, she was not a candidate for a kidney transplant. Nor was the rest of her body able to cope.

"We would find her unconscious at the dialysis center," Molden said. "Her veins had become very weak and she was unable to support all the treatments. She eventually just gave up."

Bolden was back and forth to her hometown in Dallas, Texas. While there, her family agreed to sign an order that instructed doctors not to resuscitate their mother if she fell unconscious again.

The official cause of death was listed

“Type 2 diabetes is arguably the single greatest epidemic that we will face this century.”

— Dr. David Nathan



Sharon Molden's love for shoes keeps her focused on minimizing the impact of type 2 diabetes.

as complications due to diabetes and hypertension.

Molden has vowed to take control of her own diabetes.

"I'm going to keep going," she said. "I have to make myself get up and fight this."

In type 2 diabetes, the body either does not make enough insulin, or does not effectively use the insulin it produces.

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Living with diabetes can be a full-time job

Anthony Banks readily admits that living with diabetes is not easy.

He discovered his condition, oddly enough, when he was singing in the choir. Banks, a deacon at Morning Star Baptist Church in Mattapan, "couldn't recognize people in the [congregation]."

He dismissed that warning sign by telling himself that the trouble with his vision was due to his recent 50th birthday.

The problem persisted the next day. Banks works in the cardiac catheterization lab at Massachusetts General Hospital, and when one of his co-workers asked if he was all right, he told her that he was having trouble seeing. One thing led to another, and he agreed to take a blood glucose test.

His level was 590. It should have been closer to 100.

Banks explained that as a health professional, he is trained to take care

of everyone else and not himself. Either way, he has changed his lifestyle.

"You cannot live your life the way you want to," he said. "It's difficult to be social and mindful of what you eat at the same time. It's stressful."

It's all about the constant monitoring.

He checks his blood sugar levels twice a day — once in the morning, once at night. He's on insulin, but doesn't have much problem with injecting himself. He uses the ultra thin needles that he described as virtually painless.

Dr. David Nathan, the director of

the Diabetes Center at Massachusetts General Hospital, knows all too well the sacrifices that people must make in order to live with diabetes.

He strongly urges everyone to have their blood sugar levels checked at least once each year during their annual physical.

Dr. Nathan also cleared up a few misconceptions.

"When we say increase your 'exercise,' we don't mean take up kickboxing or train to become a pole-vaulter," Dr. Nathan said. "All we are talking about is 15 to

30 minutes of walking everyday. That's it. And when we say, 'watch what you



Anthony Banks says his first symptom of diabetes was that his "eyes weren't working right."

eat,' we don't mean look at the food on your plate as you are eating it. It means paying attention to the type of foods you are eating and how much."

Exercise and diet are integral parts of living with diabetes. Another critical part is weight. With 65 percent of Americans now considered to be overweight, dieting is a growth industry.

But again Dr. Nathan demystifies what many consider to be a constant struggle.

"Our studies show that if you are overweight, you might want to lose between five and seven percent of your body weight," Dr. Nathan explained. "That doesn't mean 50 pounds but, say, 15 pounds."

Dr. Nathan continued. "Drugs don't work as well as exercise and losing weight," Dr. Nathan said. "Those two behaviors reduce the risk by as much as 60 percent."

March 2007
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March 27 is American Diabetes Alert Day

For a prettier smile, keep your diabetes under control

Diabetes affects millions of Americans each year and approximately 11.4 percent of African Americans 20 years of age or older. One of the lesser-known aspects of diabetes is its link to oral health. Diabetes can leave a person more vulnerable to oral infections than people without the disease. These infections can be uncomfortable and make a person's diabetes more difficult to control.

Diabetes poses a threat to a person's oral health by lowering a person's resistance to infection. The mouth already harbors all kinds of infection-causing bacteria, and diabetes tends to inhibit the body's ability to defend against periodontal diseases. Periodontal diseases are infections of the gums and the bone that hold teeth in place. Diabetes may lower the body's resistance to infection by inhibiting the circulation of blood to the gums and other parts of the body. This makes those areas more prone to infection because the loss of blood reduces the body's ability to fight off any infection.

Another side effect of diabetes is a decrease in saliva production. Without the presence of saliva to wash away bacteria and plaque, tooth decay and plaque buildup may occur. If plaque is not removed regularly by brushing and flossing, it can turn into hardened tartar that sits along the gum line. This can lead to constant inflammation and oral infection. A third problem associated with diabetes is high glucose levels in saliva. This too can increase the strength and number of bacteria that threaten dental health.

The need for proper dental care is especially high for people living with diabetes because oral infections have been linked to an increased risk of heart disease as well as a decrease in the control of their diabetes. Research has shown that people who have periodontal disease are almost twice as likely to suffer from coronary artery disease as those who don't.

Experts agree that one of the most important measures people with diabetes can take to protect their health is to practice preventive oral health care. That means professional teeth cleanings, regular dental checkups every six months or according to your dentist's recommendations, brushing twice a day with a fluoride toothpaste, and either flossing or using an interdental cleaner once a day.

If you notice any of the following signs or symptoms, contact your dentist as soon as possible:

- ***gums that bleed easily***
- ***red, swollen or tender gums***
- ***gums that have pulled away from the teeth***
- ***pus between the teeth and gums when the gums are pressed***
- ***persistent bad breath or bad taste in the mouth***
- ***permanent teeth that are loose or separating***
- ***any change in the way your teeth fit together when you bite***
- ***any change in the fit of partial dentures.***

People with diabetes should also ask their insurance provider about special benefits and coverage items for which they might be eligible. For instance, Blue Cross Blue Shield of Massachusetts Dental Blue members who have diabetes receive additional benefits such as more frequent cleanings and enhanced coverage of other periodontal services. Those members that also have medical coverage through BCBSMA are invited to enroll in the insurer's disease management program for diabetes, which helps them coordinate their diabetes care.

According to the American Dental Association, the most common oral health problems associated with diabetes are:

- ***tooth decay***
- ***periodontal (gum) disease***
- ***salivary gland dysfunction***
- ***fungus infections***
- ***lichen planus and lichenoid reactions (inflammatory skin disease)***
- ***infection and delayed healing***
- ***taste impairment.***

To learn more, visit the website of the American Dental Association at www.ada.org or the American Diabetes Association website at www.diabetes.org. Your dentist and your primary care physician are good resources for getting answers to your specific questions and concerns.

When managing diabetes, the secret's in the smile.

Regular brushing and flossing don't just give you a knock-'em-dead grin—they can help prevent gum disease, which poses a serious health risk to people with diabetes. So keep your smile bright, and call your dentist for a cleaning and checkup.



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Blue Cross Blue Shield of Massachusetts is an Independent Licensee of the Blue Cross and Blue Shield Association

Type 2 Diabetes: A Primer



Monitor your blood glucose level daily, as recommended by your doctor.



Take your medications daily, as directed by your doctor.



Check your feet daily for sores, cuts and skin color changes. Have a foot exam by a health professional at least once a year.



Have a yearly eye examination.



Have your blood pressure checked at least twice yearly and your cholesterol checked yearly.



Take the A1C test every 3-6 months to measure how well you are managing your diabetes.

Living Healthy Babies program in Spanish

Blue Cross Blue Shield of Massachusetts (BCBSMA) will offer a Spanish version of one of its hallmark wellness programs beginning March 1.

The health plan's Living Healthy Babies Program is an educational initiative for prenatal care and child development. Through regular mailings that begin during pregnancy and last through baby's first year, the program provides mothers-to-be with a wide array of important information including tips about an available health plan benefit for childbirth classes, a breastfeeding guide, information about smoking and pregnancy and resources for quitting, an immunization record and tips for childproofing a home. The program is entirely voluntary and has served approximately 60,000 BCBSMA members since its launch in 1997.

BCBSMA decided to create the Spanish version of Living Healthy Babies after receiving requests from Spanish-speaking members through the health plan's bilingual call-in center. Initiated as a pilot program in February 2006, the bilingual call-in center replaces third-party translators and allows BCBSMA members the option to speak with member service representatives who are fluent in Spanish.

Interested BCBSMA members, both English and Spanish-speaking, should call 1-800-233-3344 to enroll.

Diabetes

Questions & Answers

1. Why does diabetes often result in amputation of a toe, foot, or leg?

High levels of glucose in the blood that result from diabetes can damage blood vessels and lead to poor circulation and poor wound healing. It can also damage the nerves all over the body, but particularly in the legs. For example, a diabetic can get a small cut, scratch, or ulcer on their feet (maybe from a poorly fitting shoe). Since their nerves may be affected, they may not feel it, and since they don't heal well, it can get worse. When the wound gets really bad, on a toe for instance, the only option may be to amputate — or remove the toe — to prevent the infection from spreading. This is why it is so important for diabetics to get their feet checked regularly by their doctors, and get their toenails cut by foot specialists (podiatrists) to decrease the risk of creating a cut or wound during that process. Diabetics should themselves check their feet regularly, as well as have other family members help if they can.

2. Do diabetics have to eat only special dietetic and diabetic foods and avoid sugar altogether?

A healthy meal plan for people with diabetes is the same as that for everyone — low in fat (especially saturated and trans fat) and high in whole grains, vegetables and fruits. The severity of your diabetes will dictate how strict you have to be with your diet. The best thing to do is work out a dietary plan with your doctor and a registered dietician/nutritionist that best suits you and your situation.

3. Why does high blood sugar cause blindness?

The retina is the layer on the back of the eye that captures images and sends them as nerve signals to the brain. Over time, high blood glucose levels from diabetes can damage the blood vessels in the retina — a condition called diabetic retinopathy — that can eventually lead to blindness. If a person has diabetes, it is critical they get their eyes examined yearly by an ophthalmologist (eye specialist) to monitor for eye damage and prevent blindness.

4. Is it true that diabetics can no longer eat candy, desserts, or other sweets?

In the past, people with diabetes were warned to completely avoid sugar. Experts thought that eating sugar would rapidly increase blood glucose, resulting in levels that were too high. Some people even thought that eating sugar caused diabetes, an idea that we now know isn't true. If you have diabetes, that doesn't mean you can't eat sweets. People with diabetes can eat desserts, use sweeteners, and still keep their blood glucose levels in their target range. Eating a piece of cake made with sugar will raise your blood glucose level. So will eating corn on the cob, a tomato sandwich, or lima beans. If eaten as part of a healthy meal plan and combined with exercise, sweets and desserts can be eaten by people with diabetes, as long as it is done with moderation and approved by your doctor and nutritionist.

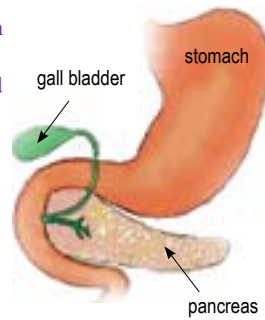
5. What is the link between diabetes and cardiovascular disease?

Diabetes can damage your blood vessels, including the arteries that supply blood to your brain and heart. This damage makes it easier for fatty deposits (plaques) to form in the arteries that can choke off blood supply and drive up your blood pressure and cause a heart attack. If you have diabetes, you're two to four times as likely to have a heart attack or stroke as someone without diabetes; you're more likely to die of a heart attack; and your risk of sudden death from a heart attack is the same as that of someone who has already had a heart attack.



Joseph R. Betancourt, M.D.
Director of the Disparities Solution Center, Massachusetts General Hospital

The pancreas, a tapered seven-inch long gland situated beneath the stomach, secretes a hormone called insulin, which plays a major role in the absorption of glucose into the cells of the body. Glucose is a simple sugar that is released into the bloodstream after we eat and digest certain foods, particularly carbohydrates.



Source: The National Cancer Institute SEER

Glucose provides fuel for the body. Just as cars run on gas, our bodies run on glucose. We are able to walk and run because glucose fuels our muscles. However, glucose cannot enter the cells without the assistance of insulin.

In type 2 diabetes, the body either does not make enough insulin or does not effectively use the insulin it produces. Sugar builds up in the blood, starving the cells of their much-needed energy, and causing potentially serious health complications.

High levels of sugar in the blood can cause long-term complications:

- ◆ **Nerve damage** — people often experience tingling, pain, or numbness mostly in the hands and feet.
- ◆ **Kidney damage** — diabetes is the leading cause of kidney failure.
- ◆ **Eye damage or retinopathy** — diabetes is the leading cause of adult blindness.
- ◆ **Cardiovascular disease** — two thirds of people with diabetes die of heart disease or stroke.
- ◆ **Infections** — more than 60 percent of non-traumatic lower limb amputations are the result of diabetes.

Source: The National Diabetes Education Program

RISK FACTORS

- **Obesity**
Excess fat, especially if deposited around the waist, increases the risk of diabetes.
- **Lack of exercise and inactivity**
Activity controls your weight, allows your muscles to use more glucose, and makes your cells more sensitive to insulin.
- **Family history**
Your risk of type 2 diabetes increases if members of your family also have the disease.
- **Age**
Diabetes generally increases with age, but is now seen more frequently in children and adolescents.
- **Gestational diabetes**
Women who develop gestational diabetes — a type of diabetes that occurs during pregnancy — have an increased risk of developing type 2 diabetes, especially if they give birth to a baby weighing more than nine pounds.
- **Race**
Diabetes is more common in blacks, Hispanics, Asian Americans, and Native Americans. More than 13 percent of all African Americans have diabetes.

Healing the racial divide in health care

Dr. Joseph Betancourt wrote the book on health care disparities. Now he's trying to erase them.

When Joseph Betancourt was in medical school, he often saw children acting as interpreters for family members who did not speak English. Originally from Puerto Rico, and as the only Spanish-speaking medical student on his team, he had to interpret for hospitalized patients.

Years later, Joseph Betancourt, MD, MPH, co-authored a landmark study by the Institute of Medicine that found striking inequities in health and health care for racial and ethnic minorities across the US.

When Massachusetts General Hospital president Peter Slavin, MD created the Disparities Solutions Center at MGH, he chose Dr. Betancourt to lead it. "It is time to move from diagnosing the problem to treating it," said Dr. Slavin.

The MGH Center is the first hospital-based Disparities Solutions Center in the country to move disparities beyond research into policy and practice. It has \$3 million in support from MGH and Partners HealthCare.

The Disparities Solutions Center will:

- advise MGH in its efforts to identify and address racial and ethnic disparities in care;
- develop and evaluate customized solutions to



eliminate disparities in the health care community in Boston and beyond;

- educate, train and expand the number of leaders working to end disparities nationwide.

Perhaps most important, the center will transfer what it learns to hospitals and health centers, community groups, insurers, medical schools, educators, government officials, and of course, physicians and nurses across the country.

One of the Center's first efforts is the new Diabetes Management Program at the MGH Chelsea Health Care Center, where more than 50 percent of patients are Latino. Latinos are more likely than whites to die from diabetes complications including kidney failure, blindness, heart disease, and amputations.

MGH Chelsea health professionals will help patients control their diabetes, get regular screenings, and prevent complications through telephone outreach, individual coaching, and group education sessions in English — and Spanish.

Translating talk into action is what Dr. Betancourt has been doing all his life.

More information at Boston Public Health Commission at www.bphc.org

SIGNS AND SYMPTOMS

- ◆ Increased thirst and frequent urination
- ◆ Fatigue and weakness
- ◆ Weight fluctuations
- ◆ Blurred vision
- ◆ Sores that are slow to heal or frequent infections
- ◆ Red, swollen, tender gums
- ◆ Tingling or loss of feeling in hands or feet

Some people have no symptoms, so screening is important, especially if you have risk factors.

BRIGHAM AND WOMEN'S HOSPITAL

PARTNERS
HEALTH CARE
A charitable non-profit organization

MASSACHUSETTS GENERAL HOSPITAL

FREE SCREENINGS FOR HEART DISEASE AND DIABETES

Date	Institution	Address	Time	Tel. No.
Fridays	Family Van	Upham's Corner Mattapan Square	9 AM - 12 noon 1:30 - 4 PM	617- 442-3200
Mondays	Family Van	Dudley Square	1:30 - 4:30 PM	617- 442-3200
Tuesdays	Family Van	Fields Corner	9 AM - 12 noon	617- 442-3200
Thursdays	Family Van	Codman Square Grove Hall	9 AM - 12 noon 1:30 - 4 PM	617- 442-3200
March 17	American Diabetes Association*	Boston Diabetes Expo Seaport World Trade Center, Boston	10 AM - 4 PM	888-DIABETES
March 23	Boston's Public Health Van	Lilla G. Frederick Middle School, 270 Columbia Rd., Dorchester	11:30 AM - 2:30 PM	617-534-2295
March 31	Boston Medical Center	New Moakley Building, 830 Harrison Ave., Boston	8 AM - 12 noon	617-638-4178

*\$10 admission fee. Call for more information regarding free online registration.

The sugar

continued from page 1

Insulin is a hormone secreted by the pancreas, a small thin gland situated beneath the stomach. Insulin plays a major role in the absorption of glucose into the cells of the body.

Glucose, or sugar, is produced when we digest certain foods, especially carbohydrates, and provides fuel for the body. Just as cars run on gas, our bodies run on glucose. There's a small hitch — glucose cannot enter the cells without help from insulin. The cells are "locked" but insulin is the key, allowing the glucose to enter. Without the assistance of insulin, sugar builds up in the blood.

For reasons not fully understood, a high concentration of sugar in the blood can cause long-term complications. Nerve damage can result in tingling, numbness, or pain in the hands and feet. Eye damage, or retinopathy, is common. Diabetes is the leading cause of blindness in adults, and is a contributing factor to cardiovascular diseases, including heart attack, stroke, and hypertension. Infections, especially of the gums, feet, kidneys, and bladder, are possible. More than 60 percent of non-traumatic amputations of the lower limb occur in people with diabetes.

Diabetes is also a precursor to kidney damage, or nephropathy. Severe damage can lead to kidney failure or end-stage kidney disease, requiring dialysis or a kidney transplant.

Diabetes is also the leading cause of erectile dysfunction.

Also on the rise is the incidence of pre-diabetes, a condition in which the blood glucose is higher than normal, but not high enough to be diagnosed as diabetes. It is estimated that more than 50 million people in this country have pre-diabetes. Having pre-diabetes does not make you immune to the complications of diabetes. People with pre-diabetes are already at increased risk for heart disease and stroke.

The risk factors of type 2 diabetes are many — obesity, especially excess weight around the waist, inactivity, age, race, and family history. Diabetes occurs more frequently in people over the age of 45; however, it is becoming more common in children, partly fuelled by obesity and lack of activity. Race is a significant factor. Although diabetes is increasing in all races, the incidence in non-whites, including blacks, Hispanics and Asian Americans, is roughly twice that in whites.

Genetics plays a role as well. An international team of scientists recently identified several genes that are linked to type 2 diabetes, according to a recent online article in the journal Nature. Locally, several institutions, including Massachusetts General Hospital, are performing research on the genes controlling diabetes.

The good news is that type 2 diabetes is largely preventable, a significant finding of the Diabetes Prevention Program, sponsored by the National Institutes of Health.

The trial determined that the illness can be delayed or prevented by implementing three strategies — losing five to seven percent of body weight if overweight; being physically active for 30 minutes a day, five days a week; and eating healthier foods and in smaller portions. Those with pre-diabetes in particular can avoid the disease by implementing this lifestyle change.

Molden considers herself blessed that she agreed to be involved with Look AHEAD (Action for Health in Diabetes), a study at Massachusetts General Hospital designed to examine the impact of lifestyle changes on diabetes. The study is sponsored by the National Institute of Diabetes and Digestive and Kidney Diseases.

There were nights when she couldn't sleep. She was so thirsty. She was back and forth to the bathroom, and her mouth was so dry that when she would finally get to sleep, she would awake with her tongue practically glued to the roof her mouth.

Her blood sugar level was at 300. The safe zone is 110.

Oral medications were out four years ago, and she started insulin injections.

Throughout her struggle, Molden has maintained her strong sense of Southern humor.

At 5'2" and 220 pounds, she has had little choice.

"When people would tell my parents that they had a big, healthy baby, they weren't lying," she said.

For her height, she should weigh about 120 pounds.

Molden knows she must lose weight and watch her diet.

She has a great motivation.

"I have to stay on top of my diabetes," she said. "I check my feet every day. I have 400 pairs of shoes and I don't want to lose a single toe."

Dr. Nathan had another motivation.

"If I were African American," he said, "I would treat diabetes like a bigot and try to fight back twice as hard."



David M. Nathan, M.D., Director of the Diabetes Center at Massachusetts General Hospital

Do you have pre-diabetes? Take the test to find out...

Test	Normal	Pre-diabetes	Diabetes
Fasting blood glucose test	Less than 100 mg/dl	100-125 mg/dl	Greater than 126 mg/dl
Oral glucose tolerance test	Less than 140 mg/dl	140-199 mg/dl	Greater than 199 mg/dl

Source: American Diabetes Association

... and then do something about it.

According to the results of the Diabetes Prevention Program, it is possible for those with pre-diabetes to prevent type 2 diabetes or delay its onset. It takes commitment and a lifestyle change.



Exercise 30 minutes a day, 5 days a week.

You can start out with ten minutes and gradually increase your time or split the activity into several short periods during the day. Walking is the easiest and cheapest, but almost any activity will do — bicycling, strength training, or even dancing.



Lose 5-7% of your weight if you are overweight.

It's really not that much. If you are 250 pounds, that amounts to only 12½ pounds.



Eat healthy foods in smaller portions.

Eat healthy foods, such as fruits, vegetables, and whole grains. Limit the portions that you eat.

These recommendations are not for pre-diabetics only. Those with diabetes can better control their disease and reduce complications with a similar lifestyle change.

Source: National Institute of Diabetes and Digestive and Kidney Diseases

American Diabetes Association Risk Test Could you have diabetes and not know it?

To find out if you are at risk, write in the points next to each statement that is true for you. If a statement is not true, write a zero. Then add all the points to get your total score.

	Yes	No
1. My weight is equal to or above that listed in the chart below.	5 pts	0 pts
2. I am under 65 years of age and I get little or no exercise during a usual day.	5 pts	0 pts
3. I am between 45 and 64 years of age.	5 pts	0 pts
4. I am 65 years old or older.	9 pts	0 pts
5. I am a woman who has had a baby weighing more than nine pounds at birth.	1 pt	0 pts
6. I have a sister or brother with diabetes.	1 pt	0 pts
7. I have a parent with diabetes.	1 pt	0 pts

Total Points:

Scoring 3-9 points: You are probably at low risk for having diabetes now. But don't just forget about it — especially if you are Hispanic/Latino, African American, Native American, Asian American, or Pacific Islander. You may be at higher risk in the future.

Scoring 10 or more points: You are at greater risk for having diabetes. Only your health care provider can determine if you have diabetes. At your next office visit, find out for sure.

At-Risk Weight Chart Body Mass Index

Height in feet and inches without shoes		Weight in pounds without clothing	
4'10"	129	5'3"	152
4'11"	133	5'4"	157
5'0"	138	5'5"	162
5'1"	143	5'6"	167
5'2"	147	5'7"	172
		5'8"	177
		5'9"	182
		5'10"	188
		5'11"	193
		6'0"	199
		6'1"	204
		6'2"	210
		6'3"	216
		6'4"	221

If you weigh the same as or more than the amount listed for your height, you may be at risk for diabetes.

For more information on diabetes, visit www.diabetes.org or call 1-800-DIABETES.

The information contained here is not a substitute for medical advice or treatment, and the American Diabetes Association recommends consultation with your doctor or health care professional.