

Diabetes: Avoiding Complications

*****Diabetes: Avoiding Complications (Part 1)*****

Narrator

Robert Pluskota was diagnosed with diabetes prior to a heart surgery in 1990. At first, the retired military man didn't take the disease seriously.

Robert Pluskota, Patient

For some unknown reason, diabetes didn't seem that dangerous, I guess that's what you could say. And I was up and down like a yo-yo and we couldn't control it for many years. If you don't watch it 24-7, it comes back to bite you.

Narrator

Robert, whose sister died of diabetes, began experiencing a number of complications, including the loss of sensation in his lower extremities, a condition known as peripheral neuropathy.

When sores began forming on his feet that wouldn't heal, Robert knew it was time to start making some changes.

Robert Pluskota, Patient

I got scared. I said, "I don't want to lose that foot. No, I want my legs."

Narrator

Americans with diabetes are at risk for serious complications ranging from heart disease and kidney failure to blindness and even amputations.

Each year billions of dollars are spent in the United States on the hospitalization of patients with these diabetes-related complications.

David Armstrong, MD, Rosalind Franklin University of Medicine and Science

Diabetes can affect your health in a multitude of ways.

Narrator

People with diabetes have an altered metabolism that results in chronically elevated levels of blood sugar known as glucose.

Normally, insulin produced by the pancreas travels through the bloodstream and attaches to special receptors on the outside of cell membranes and opens channels allowing glucose to enter.

Due to a lack of, or resistance to the action of insulin, the cells of people with diabetes do not take up glucose so it remains in the blood. This results in hunger and more caloric intake. This sets up a vicious cycle leading to even higher blood sugars and an increase in fat levels in the blood. This can clog the arteries and also blunt the body's response to insulin. Complications from diabetes can damage tissues of key organs throughout the body, including:

- The heart and blood vessels
- Kidneys
- Eyes
- Lower extremities

Aruna Venkatesh, MD, UT Health Sciences Center, San Antonio

It affects so many different systems and impacts quality of life and life-span also.

Narrator

But medical experts say that these complications are not inevitable. Most diabetes-related complications can now be prevented if individuals successfully manage their disease. That means controlling glucose levels by eating healthy, exercising, avoiding stress and taking medication if necessary.

John Buse, MD, University of North Carolina

We have developed seven or eight different kinds of medicines that attack the problem of high blood-sugars in different ways. So ten years ago we used to tell patients that you need to get your blood sugar well controlled. Now we actually have the ability to do it instead of just telling people they should do it.

Ten years ago, probably a third of patients realistically could get their blood sugars well controlled. Now it is probably closer to 95, 97 percent of patients can have their blood-sugars well controlled with good advice and minimal effort.

Narrator

The importance of keeping blood sugars as close to normal as possible as a means of preventing complications was borne out by the largest and most comprehensive diabetes study ever conducted.

The 10-year Diabetes Complications and Control Trial found that lowering blood glucose led to a:

- 76 percent reduced risk of eye disease
- 60 percent reduced risk of nerve disease
- 50 percent reduced risk of kidney disease

Judith Fradkin, MD, National Institutes of Health

This has really revolutionized care for patients with diabetes in the United States. For every one of these things, there are now proven therapies that can improve outcomes and so people need to know about that and take advantage of it.

John Buse, MD, University of North Carolina

I think today people with diabetes should never develop disabling complications. Now they may develop a little issue here, a little issue there, but as far as going blind, having an amputation, ending up on dialysis, it just really shouldn't happen anymore.

Narrator

Complications from diabetes can harm sensitive tissues and organs throughout the body.

Up next, we'll learn more about the most vulnerable areas and how people with diabetes and their healthcare providers need to work as a team to prevent complications.

*******Diabetes: Avoiding Complications (Part 2)*******

Narrator

Heart-and-blood vessel disease is one of the most serious complications associated with diabetes. In fact, three out of four people with diabetes will die from heart disease or stroke.

So when people with diabetes arrive at the Imperial Point Medical Center's emergency room in South Florida, they immediately receive extra scrutiny.

Mary Mailloux, MD, Imperial Point Medical Center

They will actually have hardening of the arteries earlier in life than somebody without diabetes. So when someone comes in with a complaint of chest pains and they're a diabetic, that patient is really looked at quite seriously as potentially having a heart attack or being at risk for having a heart attack.

Aruna Venkatesh, MD, UT Health Sciences Center, San Antonio

It confers the same risk as having had a heart attack. Now if a person had a heart attack, they would take it very seriously and will do everything they can to not have another heart attack. Most individuals do not recognize diabetes as the same risk factor. They say, "You have diabetes," it doesn't put fear in their hearts and say "Oh my God, am I going to have another heart attack?" as it would if you had previously had a heart attack.

Narrator

In addition to properly managing glucose levels, medical experts stress that it is crucially important for people with diabetes to control their blood pressure and cholesterol.

Mary Mailloux, MD, Imperial Point Medical Center

Blood pressure, cholesterol and diabetes all adversely affect the blood vessels. So, you need to really be managing all three of those in order to better take care of yourself.

Narrator

Maintaining a healthy body weight is good for your heart and it also can benefit many individuals with the more commonly diagnosed type 2 diabetes.

Judith Fradkin, MD, National Institutes of Health

Being overweight makes your body more resistant to the actions of insulin. It is really important for people who are overweight to try to get down closer to a good body weight.

Narrator

High blood-sugar levels associated with diabetes also can harm the kidneys, a fact that Carol Myers learned when she was 25 years old. During a physical, her routine kidney-function tests came back with disturbing results.

Carol Myers, Patient

They were way out of kilter. So that was my first exposure to a complication from the diabetes.

Narrator

Diagnosed with type 1 diabetes when she was only four, Carol remembers a childhood in which sweets were forbidden. Her perspective on the disease evolved as an adult.

Carol Myers, Patient

I was fortunate enough to have a kidney transplant, and that was successful for about eight years. I ended up with a second transplant that I've had for seven and it's working beautifully.

It is an ongoing process. You can't ever put it completely out of your mind.

Narrator

Dialysis, a time-consuming process in which waste is mechanically removed from the blood, is another option for people with diabetes who have failing kidneys.

Dr. Juan Carlos Ayus, Director of the Dialysis Service at Texas Diabetes Institute in San Antonio, says that with the level of care available today, fewer people with diabetes should be receiving dialysis.

Juan Carlos Ayus, MD, Texas Diabetes Institute

What I see when I put somebody on dialysis is a failure. It's a failure of the medical treatment for that particular patient.

Narrator

Researchers like Dr. Josie Briggs at the National Institutes of Health say there are signs of progress in terms of preventing kidney complications related to diabetes.

Josie Briggs, MD, National Institutes of Health

Good control of blood pressure, good control of blood sugar and the drugs that help slow kidney disease in diabetics are really starting to have an impact.

Robert Pluskota, Patient

There is no feeling in the bottom of my feet. I can bang my toe, and break it, split the skin open and not even feel it.

Narrator

Peripheral neuropathy, or the loss of sensation in the lower extremities, is one of the most dreaded complications of diabetes because it can lead down a path to amputation.

David Armstrong, MD, Rosalind Franklin University of Medicine and Science

Folks with diabetes, over time, tend to lose the gift of pain. Pain is a gift because it tells us when there is a problem. Over time, folks with diabetes can develop what is called peripheral neuropathy and they lose the ability to tell when something should be painful. So folks with diabetes can wear a hole in their foot just like you or I would wear a hole in our shoe.

We can see injuries as simple as a little blister or an ingrown toenail that again because of the lack of the ability to feel pain could become more serious than it would in someone without diabetes.

Narrator

Due to the associated damage to nearby blood vessels, foot injuries in people with diabetes tend to heal slowly. There is also a greater risk of dangerous infections.

David Armstrong, MD, Rosalind Franklin University of Medicine and Science

Once someone has a sore, about half of those sores are going to get infected during the lifecycle of the wound. Of those patients that have an infection, one in five are going to have an amputation.

Narrator

Although numerous advances are being made in the area of wound healing, Dr. Armstrong insists that prevention is the key to avoiding diabetes-related complications in the lower extremities.

David Armstrong, MD, Rosalind Franklin University of Medicine and Science

Just look at your feet every day; just like you comb your hair or you brush your teeth. On every visit to your general doctor, take your shoes and socks off. It is so simple. So the doctor is compelled to look at your feet.

Narrator

A routine test at the doctor's office will determine whether a person with diabetes has lost any sensation in their feet.

David Armstrong, MD, Rosalind Franklin University of Medicine and Science

It can be assessed very quickly and it's often assessed with a simple device that looks like a little piece of fishing line called a monofilament. A very simple scan of the foot which can take five or 10 seconds is often the difference between getting an amputation and not getting one.

Narrator

When it comes to his feet, Robert Pluskota listens to his doctor. He inspects his feet daily. Robert never walks without wearing shoes.

Robert Pluskota, Patient

I am a 100 percent true devotee to following the doctor's orders.

Narrator

Researchers have found that diabetes tends to damage smaller blood vessels, which explains why eye and vision problems are another complication associated with the disease.

John Buse, MD, University of North Carolina

We call them micro-vascular complications. The notion is that it is really a disease of the capillaries, the little tiny blood vessels that supply sensitive tissues like nerve tissue, eye tissue.

Narrator

Individuals with diabetes should get regular vision screenings. If a problem does develop, a laser surgery technique has been perfected that greatly reduces the risk of blindness.

John Buse, MD, University of North Carolina

I haven't seen a seeing-eye dog in my office in probably close to 10 years. Someone diagnosed with diabetes today has no business going blind. It should just never, ever happen.

Narrator

Regardless of the complication that they are seeking to prevent, Dr. Buse has similar advice for his patients with diabetes.

John Buse, MD, University of North Carolina

For preventing heart attacks, for preventing eye disease, for preventing kidney disease, for preventing nerve disease, the basics are all the same: blood-sugar control, blood-pressure control, cholesterol control.

Narrator

Up next, we will learn how vital it is for patients to follow their treatment plans day by day to avoid life-altering complications from diabetes.

*******Diabetes: Avoiding Complications (Part 3)*******

Judith Fradkin, MD, National Institutes of Health

The involvement of the patient is what is really critical. With controlling diabetes, it is really a minute-to-minute, hour-by-hour everyday kind of a thing.

Carol Myers, Patient

You're with yourself 24 hours a day, the doctor isn't, the diabetes educator isn't, but they have a whole lot of information that they can share with you that you can keep with you for 24 hours.

John Buse, MD, University of North Carolina

Doctors don't take care of diabetes. I tell patients all of the time, at best, I am a coach.

Narrator

Besides acting as a source of information, diabetes educator Camille Izlar sees herself filling a slightly different role for her patients.

Camille Izlar, RN, Diabetes Educator

We are their cheerleaders. We are their advocates.

Narrator

Instead of insisting on dramatic and sudden lifestyle changes, Camille encourages her patients to make healthier eating choices that may include smaller portions and to get more exercise. Which can mean something as simple as parking a few rows further away from the entrance to the grocery store.

Camille Izlar, RN, Diabetes Educator

It is real important to make the small changes and make them feel successful.

Narrator

But she also refuses to sugarcoat the serious consequences that patients may experience for failing to stay on top of their disease.

Camille Izlar, RN, Diabetes Educator

There are some bad things that go along with diabetes if blood sugars are not well controlled.

Narrator

Dr. Buse says that one of the most vital tasks for patients in managing their diabetes involves regular blood-glucose monitoring.

John Buse, MD, University of North Carolina

You can't fix the blood sugar unless you know what it is.

Narrator

In addition to checking their blood glucose levels during the day, individuals with diabetes should have a hemoglobin A1c test performed. This test provides a picture of their average glucose control for the past two to three months.

John Buse, MD, University of North Carolina

It has been shown that hemoglobin A1c is the best predictor of the risk of developing complications.

Narrator

Robert Pluskota can vividly recall periods years ago when he let his diabetes get out of control.

Robert Pluskota, Patient

Your sugar is going up and you're getting worse and you don't even know it. You're just getting tired. You sleep a lot. You don't have energy to do anything. Right after a meal, you get exhausted. You don't want to go anywhere or do anything. It's the diabetes getting worse and worse and worse and worse.

Narrator

Now that he is paying attention to his diabetes and has educated himself about the disease, Robert is making wiser nutritional choices and exercising more. He says the benefits are unmistakable.

Robert Pluskota, Patient

I made some improvements to where I am at now. I am getting better every day.

For the first time in my life, I feel really happy with myself. I don't fear the diabetes any more. I control it.

Narrator

These days Dr. Buse says he is hearing more success stories like Robert Pluskota's and fewer nightmares involving diabetes-related complications.

John Buse, MD, University of North Carolina

Ten years ago it was common you know, every week, every month I would hear about somebody going blind or having an amputation. I would see someone as a referral from the community that was just a wreck.

That pretty much doesn't happen anymore. I think things are really getting a lot better very quickly in the United States. I think the statistics are still a little bit behind.

Narrator

But experts like Dr. Judith Fradkin at the National Institutes of Health emphasize that there is still plenty of room for improvement.

Judith Fradkin, MD, National Institutes of Health

Research has shown that only 7 percent of people in the US are actually achieving the level of blood-sugar control, blood-pressure control and cholesterol control that has already been conclusively proven to reduce their risk of complications.

We know that we can do much better than we are doing.

Narrator

Coming up, we'll see what a looming obesity epidemic may mean for the future of diabetes.

*******Diabetes: Avoiding Complications (Part 4)*******

Narrator

Researchers are striving to develop new therapies that will prevent or at least, delay the onset of diabetes.

John Buse, MD, University of North Carolina

I think it pretty likely that some of these pills that we are working on will prevent the development of type 2 diabetes.

Narrator

But experts fear that these anticipated advances will be overwhelmed by a rising tide of obesity stemming from the inactive lifestyles and poor eating habits that have become widespread in today's modern culture.

David Armstrong, MD, Rosalind Franklin University of Medicine and Science

That obesity epidemic that is the bane of our time. And obesity and diabetes are inextricably linked.

Narrator

It is estimated that 10 percent of the American public currently has type 2 diabetes. But these figures are expected to skyrocket in the future.

John Buse, MD, University of North Carolina

It is estimated now that people born in the year 2000 will have a 40 to 50 percent chance of developing it in their lifetime.

Juan Carlos Ayus, MD, Texas Diabetes Institute

Unless we really take that seriously. I mean seriously, with education at the level when people are very young, we are going to have a tremendous burden that could even bankrupt this magnificent country.

Narrator

For people who have already been diagnosed with diabetes, it is important to remember that they will need to manage the disease for the rest of their lives. And what they do today may positively or negatively impact their health and well-being for years into the future.

Judith Fradkin, MD, National Institutes of Health

It is really important for people to take a long-term perspective when it comes to managing diabetes. Things that you do early in the course of diabetes affect your prognosis 20 years later.

John Buse, MD, University of North Carolina

In general the people who have good control of their diabetes, their blood pressure, their cholesterol, who take aspirin and who don't smoke do very, very, very well and in general the people who don't do those things are at high risk of all kinds of bad things happening.

For patients the thing to realize is that we should be able to prevent all of these complications from happening and they should talk to their doctor about how to do that.

Narrator

Dr. Armstrong tells his patients that education and paying close attention to details are the best weapons to prevent diabetes-related complications.

David Armstrong, MD, Rosalind Franklin University of Medicine and Science

What you don't know in diabetes and what you don't feel in diabetes can hurt you.

Narrator

After his own experience with complications stemming from his poorly controlled diabetes, Robert Pluskota has realized that he can no longer afford to ignore his condition.

Robert Pluskota, Patient

Diabetes is a very, very demanding disease that requires attention all of the time.

Narrator

Following her two kidney transplants, Carol Myers also has learned a valuable lesson about diabetes.

Carol Myers, Patient

Working with and participating with your physician, listening to what he has to say, asking, learning, getting knowledge about the potential complications and what you as the patient or person with diabetes can do to help yourself.

Knowing about your disease, and what can be done about it and how you can affect what happens to you is what I think is most important.