

Natural Sound:

“Are you taking an aspirin a day?”

Narrator

Meet cardiologist Perry Krichmar. He spends his day treating patients suffering with heart complications. He also keeps a close watch on diseases that may potentially threaten the condition of his patients’ hearts: diseases like diabetes. But Dr. Krichmar’s eyes aren’t only on his patients.

Perry Krichmar, MD, Cardiologist

“Both my parents, have diabetes and there’s obesity in my family so it always makes me... it’s always a very important disease for me to monitor not only in my patients but also in myself because I know what diabetes can do to you.”

Narrator

Nearly one million, new cases of diabetes, are diagnosed every year.

John Buse, MD, University of North Carolina

“Today about 10% of the population has type 2 diabetes, or 1 person in 10.”

Narrator

Diabetes is a disease that occurs when the levels of sugar, also called glucose, in the blood are chronically too high. This high blood sugar results from a failure of the body to respond to or to make insulin. Diabetes as evidenced by excessive glucose in the blood, can eventually lead to many serious complications like: blindness, heart disease, stroke, kidney disease, and leg amputations.

When carbohydrates, the complicated sugars and starches in our diet, are digested, they become the simple sugar glucose, which passes into the bloodstream. Glucose is the body’s main source of fuel, but it can’t nourish our cells without entering into them. Insulin is then needed to move glucose into the cells, in particular, the liver cells, muscle cells, and fat cells.

In normal function, the pancreas, located in the middle of the body’s digestive track produces insulin from clusters of cells called beta cells. In what is referred to as type one diabetes, the body’s immune system attacks its own insulin producing beta cells in the pancreas. As the cells are destroyed, the body loses the ability to produce insulin.

Without insulin, glucose can’t get into the cells and thus stays in the bloodstream. Type 1 diabetes cannot be prevented, and all people with type one diabetes are dependent on insulin injections for their very existence.

Natural Sound:

“How long have you had your diabetes for now?”

Narrator

Far more common is type 2 diabetes, present in between 90 to 95 percent of all people with diabetes.

John Buse, MD, University of North Carolina

“In type 2 diabetes, there’s insulin that’s being produced but often not quite enough and the insulin doesn’t work very well.”

Narrator

And unlike type 1, by making major lifestyle changes, the onset of type 2 diabetes can be prevented or delayed for many years.

Ralph DeFronzo, MD, University of Texas Health Science Center

“It’s critically important that people try to maintain ideal body weight. So if people are overweight they need to lose weight, people are at an ideal body weight they need to maintain it. And then it’s also very important for people to exercise on a regular basis.”

Narrator

Before people develop type 2 diabetes, they have what is called pre-diabetes, where their blood sugar tests higher than normal, but not high enough to be diabetes. If the pre-diabetes is not properly cared for, the temporary diabetes becomes permanent. In the United States, an estimated 41 million people are living with this early form of diabetes.

Ralph DeFronzo, MD, University of Texas Health Science Center

“I think we can certainly control both diabetes and prevent pre-diabetes from going to diabetes with lifestyle modifications and with the medications that are available.”

Narrator

The other main risk factor for developing diabetes is a family history. Both of Perry Krichmar’s parents have diabetes. And he knows this makes his risk for developing the disease that much higher, and the experts agree.

John Buse, MD, University of North Carolina

“So a family history of diabetes is a pretty strong risk factor for developing diabetes – it probably increases your risk about twice versus the general population.”

Judith Fradkin, MD, National Institutes of Health

“Diabetes does tend to run in families, there is a significant genetic component.”

Ralph DeFronzo, MD, University of Texas Health Science Center

“If you have two diabetic parents and you’re born in that family, you have a 70-80% chance of developing diabetes. If you have one diabetic parent, you have about a 30-40% chance of developing diabetes, so family history is very important.”

Narrator

Perry understands the risks and takes the necessary precautions.

Perry Krichmar, MD, Cardiologist

“And if I don’t watch my weight, if I don’t exercise, if I don’t do all the things I need to do to keep myself healthy my chances of developing diabetes is going to be much higher than the average person.”

Narrator

Perry’s wife, Lorraine also has a family history of diabetes: something she discovered when she was barely a teenager.

Lorraine Krichmar, Cardiologist’s Wife

“Diabetes was first introduced in my family with my mother. And so then, she was asked to have the insulin injections and she started with that which was very difficult for her because she could not inject herself. And I was around, I would say 12 probably 12 or 13 years old and I would see you know the anxiety. She was anxious and upset so we decided that I would inject her.”

Narrator

That experience left its mark on Lorraine.

Lorraine Krichmar, Cardiologist’s Wife

“No one wants to be pricked and have to be injected everyday. So yes, I was hoping that I would never have to deal with that.”

Narrator

The Krichmar’s have seen first hand what diabetes can do to the body – physically and emotionally, and with their children, they are determined to make the family’s link to diabetes--- history.

Perry Krichmar, MD, Cardiologist

“Yes, I think that the fact that we both exercise regularly, we’re not heavy, we’re setting an example for them. They see that.”

Lorraine Krichmar, Cardiologist’s Wife

“If they see us, my husband and myself as role models, we’re constantly working out we try to eat right. Hopefully they’ll follow in our footsteps.”

Narrator

Diabetes can strike anyone at any age, and children and adolescents are being diagnosed more frequently. We'll see whose most at risk when we come back.

Narrator

People diagnosed with diabetes are at risk for premature death, but diabetes can be controlled and prevented or delayed.

Individuals most at risk are:

- People with a family history – those with grandparents, a mother, father, or siblings with diabetes.

In addition to those with a family history, others at risk for diabetes include minorities in particular: Native Americans, Asian Americans, Pacific Islanders, African Americans, and Latinos.

Ralph DeFronzo, MD, University of Texas Health Science Center

“We know that the Hispanic population, the Mexican Americans, African Americans have an increase in the prevalence of the genes that cause type 2 diabetes.”

Narrator

Those who are overweight or obese and who don't exercise are also at an increased risk for diabetes.

Ralph DeFronzo, MD, University of Texas Health Science Center

“And when you gain weight or you're physically inactive, that makes the insulin resistance worse.”

Narrator

Individuals who have risks for cardiovascular disease like: high blood pressure; high levels of bad LDL cholesterol or low levels of good HDL cholesterol and high triglyceride levels are also at an increased risk for developing diabetes.

So its very important that doctors and patients focus not only on the blood sugar control but also on the blood pressure and blood lipid control.

John Buse, MD, University of North Carolina

“About 75-85 percent of people with diabetes will die from a heart attack or stroke. It's the most common disabling conditions in diabetes.”

Perry Krichmar, MD, Cardiologist

“As a diabetic with blood pressure that’s a double whammy because now you have two major risk factors for developing heart disease. But as a diabetic it’s very important because the risk of developing end organ damage – damage to the kidneys, to the eyes, to all the vessels, the arteries in your body is much higher when your blood pressure is that much higher.”

Narrator

Another risk factor is age. Most people don’t show signs of type 2 diabetes until later in life and although diabetes has a strong heredity component, everybody over the age of 45 should have a simple blood test to see if they’re at risk for diabetes.

Narrator

But sometimes a form of diabetes shows up much earlier than the forties. Meet Ohio resident Michelle Brown. While pregnant with her daughter, Michelle found out her family history was complicating her condition.

Michelle Brown, Patient

“My grandfather on my mother’s side had type 1 diabetes and then all of his siblings as well had it. And then it skipped a generation and my mother and my uncle did not have diabetes at all. And then diabetes came up with me when I was diagnosed with gestational diabetes.”

Narrator

Gestational diabetes is rare. About 135,000 pregnant women, like Michelle, develop it every year.

Ralph DeFronzo, MD, University of Texas Health Science Center

“You now go through pregnancy and your body becomes more resistant to insulin that’s a big stress if you’re carrying the genes for diabetes. And so now you have the genes that cause insulin resistance, you have the pregnant state that’s making you insulin resistant and your body can’t produce enough insulin to overcome all of this insulin resistance so you become overtly diabetic.”

Michelle Brown, Patient

“When I first heard you know I had gestational diabetes, I was like oh my gosh, what am I going to have to do with this and it scared me at first but once I knew more about it and saw the dietician and knew what I could eat and couldn’t eat it wasn’t you know incredibly painful or anything like that.”

Narrator

Gestational diabetes goes away after the child is delivered. However, according to the American Diabetes Association once you’ve had gestational diabetes, your chances are 2 in 3 that it will return in future pregnancies. And there’s also a substantial risk that the disease will return for good.

Ralph DeFronzo, MD, University of Texas Health Science Center

“We know that these people are at very high risk, about 60-70% of them over 5 years will develop diabetes.”

Michelle Brown, Patient

“It does scare me, it’s not something that I do want to have to do but if I am presented with the fact that I do have it – its treatable and its controllable and I know that I can control it because I did that while I was pregnant.”

Narrator

Michelle, with help from her husband, takes extra measures to ensure that the family history of diabetes skips another generation.

Michelle Brown, Patient

“My husbands’ the chef of the family so he cooks dinner for us every night and he’s really conscientious about what he’s making especially since we have our little girl now too. I mean it’s a lifestyle change more than anything. You’re just eating healthy and continuing eating healthy.”

Narrator

When we return, we’ll show you how people at risk for diabetes can improve their overall health and forestall the disease as long as possible.

Narrator

It is estimated that millions of people in the United States are living with undiagnosed pre-diabetes. But in this case ignorance is not bliss. What you don’t know actually can hurt you.

In a healthy individual the fasting blood glucose is below 100 mg. If an individual has pre-diabetes the number ranges between 100 and 125 mg. anything above indicates that the individual has diabetes.

Natural Sound:

“Ok, so what do we need to do...”

Narrator

48-year-old Stuart Muncer and his wife Sandy love spending extra time in their wood workshop. Stuart creates and Sandy finishes. It’s a hobby they both have grown to love. But earlier this year Stuart received some news that jolted him out of his workshop.

Stuart Muncer, Pre-Diabetes Patient

“Well, I definitely wasn’t prepared for it. It isn’t anything that ran in my family. I had a grandfather that had diabetes very very late in life but my normal day-to-day family – no body has diabetes. And it was a shock.”

Narrator

After he got over the shock, Stuart saw this as an opportunity to change his lifestyle.

Stuart Muncer, Pre-Diabetes Patient

“What I’ve found and my wife also, was that we needed to do something to get healthier and lose weight. And I think this was part of the catalyst that made us get on a good diet program and stick with it.”

Narrator

Registered dietician, Carolina Mejia of the University of Texas helps people to lose weight by changing their eating habits.

Carolina Mejia, Registered Dietician

“The number 1 problem I find with people with diabetes or pre-diabetes or people that are at risk for diabetes is that they’re skipping meals. And that tends to be very common. We typically recommend that they eat 3 meals a day, try not to eat 1 or 2 big meals. When they do that, they tend to overeat and actually add additional calories and then of course the weight gain comes along with it.”

Natural Sound:

“So these are going to be your starches, right here.”

Narrator

Carolina teaches her clients that eating healthier foods doesn’t mean they have to cut out everything they love.

Carolina Mejia, Registered Dietician

“Every food group is beneficial.”

Narrator

The list of healthy foods includes:

- Vegetables
- Whole grains
- Fruits
- Non-fat dairy products
- Beans
- Lean Meats
- Poultry and
- Fish

Natural Sound:

“So how many servings do you have right here.”

Narrator

It's not so much about the foods; it is about how much of them.

Carolina Mejia, Registered Dietician

“Portion control is crucial. Without portion control everything is out of whack. A lot of patients think that once they're diagnosed or they are at risk for diabetes that they have to avoid their favorite foods, you know or ethnic foods or foods they grew up eating which is not necessarily true. Basically what they have to do is limit the amount.”

Narrator

A combination of healthy eating and exercise can delay the onset of diabetes in those who have pre-diabetes. Stuart and his wife seem to have gotten the message.

Stuart Muncer, Pre-Diabetes Patient

“I think that we've committed to changing our lifestyle. We've found food that we can eat that's good for us. And that isn't high in carbs and sugar and we try to exercise a few times a week. That's the most important part of it I think.”

Carolina Mejia, Registered Dietician

“So with diet and exercise all of that will help them reach the optimal blood sugar levels that they're looking for. Exercise will one help you lose weight which is a good side effect because the weight loss actually will make their body less insulin resistant. So the insulin they are producing works better and so that helps control their blood sugar. The second thing with exercise is that it actually makes their muscles more sensitive to the insulin so again also helping lower the blood sugar.”

Ralph DeFronzo, MD, University of Texas Health Science Center

“So we know that even mild exercise such as walking 3 or 4 times a week if they do it 30 to 40 minutes per day can have a major impact in decreasing the conversion rate of pre-diabetic state to diabetic state.”

Narrator

Change doesn't have to start with intense workouts or by running a marathon and eliminating favorite foods, but rather the experts say patients should start slow say do 5 – 10 minutes of exercise and work up to 30 minutes, 5 days a week.

Staying active throughout the day helps burn calories and the more moving around people do the more energy they will have. People can walk when they get a chance, park farther away when shopping, take the stairs instead of the elevator, and even working around the house can be beneficial. Stuart has some other suggestions.

Stuart Muncer, Pre-Diabetes Patient

“Cutting the grass, working around the yard, or you go for a walk. I find that at work, if I take a break at lunchtime, I’ll eat my lunch and then go walk for 15-20 minutes – it’s easy enough to do. And besides you get to be outside and get a break from work so that works out well too.”

Narrator

The National Institutes of Health began a study called the Diabetes Prevention Program. 3000 people already diagnosed with Pre-Diabetes were placed in 3 groups with 3 different approaches ... standard lifestyle advice, intensive lifestyle modification with medical follow-up, and the third group received medication. The results were clear.

Judith Fradkin, MD, National Institutes of Health

“And what we found is that in the group that got the intensive lifestyle the rates of development of diabetes over three years were decreased by 58 percent.”

Narrator

The American Diabetes Association website offers strategies to help individuals struggling with how much food they should eat or what type of exercises they should do. Links like “Rate Your Plate” and the USDA Diabetes Food Pyramid can help individuals practice portion control and identify foods based on their carbohydrates and protein content instead of their classification as a food group.

Up next, we’ll take a look at a national program designed to help people avoid developing diabetes.

Narrator

Diabetes can be prevented. By losing some weight, by getting at least 30 minutes of physical activity five days a week and eating healthier, people with pre-diabetes can delay or prevent the onset of the disease.

The federal government has embarked on the Small Steps, Big Rewards program, the first-ever national campaign designed to get that message to millions that diabetes can be delayed or prevented entirely.

For more information on the campaign and for a list of more than 50 ways to prevent diabetes visit the National Diabetes Education Program website @ ndep.nih.gov.

It’s a message the experts want the public to clearly understand.

Carolina Mejia, Registered Dietician

“If they’re a pre-diabetic, diabetes is preventable – it doesn’t have to happen. Of course it’s going to require some work on their part, but that’s why I usually tell them right now you have the complete power to turn everything around and so that makes them feel a lot better.”

Natural Sound:

“Deep breath.”

Narrator

If diabetes isn’t prevented, it can be delayed by 10 to 15 years. And the future offers the promise of new and better treatments for diabetes.

Ralph DeFronzo, MD, University of Texas Health Science Center

“There’s a lot of hope that we will have really within the next 5-10 years even better drugs than we have. But I must say that the drugs that are out there really are quite good. And I would say that if someone comes to me in the early stages of diabetes, I can control almost all of these people just with oral medications. Now we know that diabetes tends to be a progressive disease and that about 1 in 4 individuals eventually end up on insulin but even now with these newer drugs there’s great hope.”

Narrator

While medications help, lifestyle modifications are the key to dealing with diabetes and pre-diabetes. If they make the necessary changes, and have the help of a healthcare team and support from family and friends, patients can take charge and defeat diabetes.

This program was reviewed by:

Bruce B. Dan, MD
Managing Editor
The Patient Channel

Alan D. Cherrington, PhD
Professor of Diabetes Research
Vanderbilt University Medical Center

Special Thanks:

University of Texas
Health Science Center

Texas Diabetes Institute
San Antonio, Texas

For More Information on Preventing Diabetes contact:

The American Diabetes Association
www.diabetes.org

1-800-Diabetes
(1-800-342-2383)

Or if you want to learn more about the Small Steps, Big Rewards Program, visit
www.ndep.nih.gov

For more information about this or any other health-related topic please visit our website
@ www.thepatientchannel.org