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NEW LEADERS FOR BETTER HEALTH

February 24, 2005

In collaboration with: CBET Burroughs, Fresno Adult School Cesar Chavez, Fresno Interdenominational Refugee Ministries, Fresno Center for New Americans, FUSD Parent Engagement Center, Fresno Health Consumer Center, Fresno County, Families First, Fresno Barrios Unidos, CBET Jefferson

FOCUS:

Diabetes Education with Dr. Carl Waddle

Carolina Simunovic: Next month we are going to have a very exciting presentation. How many of you were here last year when Nancy Amidei came to speak? Remember those pictures with the telephones and she had us call all of those people and the governor? She was a very good teacher, and she's going to teach us some very important things about advocacy. Why is this going to be very important? Because on April 22nd our guest for this meeting is going to be Assembly Member Juan Arambula. It's very important to come to the training before you come to the next meeting. For what else is this going to be very important? In May we are going to have two trips that hopefully a lot of you can participate in. What are we going to have? Air Quality Action Day when we go to Sacramento to speak with the senators and the assembly members and tell them that we want clean air for everybody. This is going to be on May 4, 2005. Put it on your calendars. May 4th for Air Quality Action Day. And then May 10, 2005, the next week, is Hunger Action Day. This group was even able to be in Lieutenant Governor Bustamante's office because we got to meet with some of his people. These are the few things that we're going to have in the coming months, so just be aware, write it on your calendar, don't miss a meeting because they are going to be very, very good.

Carmen Arambula: We talked about the two things we're going to be doing in May. In May we're going to have these two trips going up to Sacramento. We're also going to have a trip in April. It's April 16, so mark it down on your calendar. It's very, very important. We're going to go up to Sacramento and actually talk to Arnold Schwarzenegger who is our governor. We're going to talk to him about health insurance for all kids in California, so we're bringing people in from all different parts of California, from San Diego, from Los Angeles, from San Francisco. We're going to try to have about 5,000 people there. It's that big. It's that important. So if you guys are interested in going please write your name down and put a little star by it. The next two meetings are very, very important. Please come. Nancy Amidei is really good, she's really fun, and she'll teach you how to talk to people like your governor and how to talk to people like Juan Arambula, who is your state assemblyman, so it will be really important for you to learn that and then you can practice it with these people who are making all of the choices for you right now. It will be a chance for you to talk to them about what's really important to you.

Laurie Primavera: Good morning. I'm Laurie Primavera. I work with Fresno Metro Ministry. It's my pleasure to introduce Dr. Carl Waddle who will be teaching you about diabetes. Dr. Carl Waddle is a very smart man. He's not a physician doctor. He was a dean at City College twice, a big administrator type at City College. He decided to go back to school to be a nurse, and through the course of becoming a nurse he is now a certified diabetes educator and he is also fluent in Spanish. Carl also lives with diabetes, so he not only teaches it, he manages his own. We're very lucky to have Dr. Waddle, and I will turn it over to him.

Dr. Carl Waddle, Certified Diabetes Educator

I'm going to do this in English because the slide program is in English. I usually teach in Spanish. About 60% of my practice with diabetics is in Spanish. One thing that Laurie did not mention was that I actually took time off and my wife and I went to Saltillo, Coahuila, and I completed the Doctorado en Filosofia y letras at Ateneo Fuente, which is the state university of Coahuila in Saltillo. That was more than 35 years ago, so I suspect Saltillo has changed a lot since we were there. Laurie did mention that I have had diabetes for 40 years. It is an enormous advantage for me as a diabetes educator to be able to tell my patients that they are not necessarily going to die right away. I have had people cancel automobile purchases after they find out they have diabetes because they think they're going to die in a year or two, and the only people who die right away are people who get hit by trucks, people who develop some other illness, or people who do not control their blood sugar. Otherwise, life expectancy is almost the same. You can expect to live about the same number of years as a person who is not diabetic if you control your blood sugar because the real difference between us diabetics and people who don't have diabetes is the amount of sugar that is in our blood on average. That's the difference.

The single most important symptom for diabetes is having to urinate often

I was given a sheet with some questions and I'm going to alter the presentation just a little bit to deal with these questions and then we'll come back to the presentation. The first question is: What are the symptoms of diabetes? Does everyone know what a symptom is? We have both signs and symptoms. Signs are something that another person can sense, can see, can hear, can feel. A symptom is something that you have to tell the doctor or the nurse because it can't be seen, like pain. I cannot show you may pain. You cannot put your hand on my forehead and feel my pain. I can tell you that I have pain, but that makes it a symptom. The symptoms and signs of diabetes are really three major ones. They have very fancy names in English. One of them is polyuria. Polyuria simply means much urination. So if people are telling me when they come in, "I have to go to the bathroom every 15 or 20 minutes," I make a little note in my head, the first major sign of diabetes. The next is polydypsia, a fancy word that means a lot of thirst. If think about it, if you're urination a lot you're getting rid of water and you're probably going to need more water, so those two are related. You're getting rid of a lot of water, you feel a lot of thirst, you need to drink a lot of water. The third major or cardinal symptom of diabetes is hunger. That seems like a contradiction because your problem is you have too much of the major food, which is sugar, in your blood, and yet you feel hungry. But it's only a surface contradiction because what's happening in diabetes is the sugar stays in your blood and it can't get into your tissue, into the cells of your body where it belongs, so your brain thinks you're starving to death and the sugar all stays in the blood and can't get to where it is supposed to be. The word itself,

diabetes, basically means flow through, or for those of you who know the word, siphon through, and it refers to having to urinate a lot, having to go to the bathroom a lot, and so that is probably the single most important symptom for diabetes.

There are three major types of diabetes: Type 1, which is hereditary, type 2, which can be prevented, and gestational, or diabetes that occurs during pregnancy

Why do people get diabetes? Well there are three major types of diabetes in terms of how they are caused, what causes them to happen. The most common diabetes is type 2 diabetes, and we know now that type 2 diabetes can be delayed or even prevented if it's caught early and if the people who have prediabetes follow a healthy regimen, if they do what they need to do to maintain their blood sugars normal. That's one of the biggest breakthroughs of the last ten years, I suppose, is that we know now that the diabetes that 95% of diabetics have can be delayed a long time, years and years, or perhaps prevented altogether by changing the way you live, the way you eat, the way you exercise, how fat you are. You can prevent the development of diabetes type 2. Diabetes type 1 also has high blood sugar but it is a disease called an autoimmune disease in which the body actually attacks the gland in your body that makes insulin and destroys your ability to make insulin. That's the kind I have. It's called type 1, and there is no way to prevent that, at least not yet. Some kind of infection causes the body to build immune responses that destroy a part of the pancreas, and once that happens you are a diabetic. What happens if you transplant a new pancreas into the body? Your body promptly destroys those parts of the new pancreas that make insulin, and so it doesn't do any good to do a pancreatic transplant. The third type of diabetes is called gestational diabetes, the diabetes of pregnancy. It usually develops during the start of the fourth month of the pregnancy and it usually ends when the baby is delivered. It is caused by the hormones that the mother's body makes to keep the baby alive, and once the baby is born the hormones go down and the diabetes goes away. The bad news is that about 60% of mothers who are diabetic while they're pregnant will later in life develop type 2 diabetes unless they take very good care of themselves.

The number of children who are developing diabetes is growing at an alarming rate. This is due to the fact that many children have poor eating habits and sedentary lifestyles.

Does bad nutrition contribute to or cause diabetes? I'm going to answer that in a different way. For type 2 diabetics, and remember, about 95% of all the diabetics are type 2, the primary therapy, the most important treatment for type 2 diabetes, is to eat a healthy meal plan. It's more important than medicine. It's even more important than exercise. Eating well is the way you prevent the development of type 2 diabetes, and if you have type 2 diabetes eating well, eating healthy, is the way to keep it from getting worse and to control it. So bad nutrition is extremely important. As a matter of fact, if you look at the charts, the record of obesity – in my form if English we just call it fat, people getting fat, children super-sizing at the fast food places and getting round instead of tall, which is a way to invite diabetes type 2 – this is the first generation in history in which pre-secondary school children are becoming type 2 diabetics. When I was a child no child ever got type 2 diabetes. It is now the fastest growing cohort of type 2 diabetics, still a minority of type 2s, but it's growing faster than people from 18 to 30 and growing faster than people from 30 to 50 and so on. It's the fastest growing cohort because kids are eating wrong and they are getting too fat. The charts of type 2 diabetes over the years and the body

weight over the years follow each other almost exactly, and they're both headed up, so much so that there is an epidemic of type 2 diabetes and obesity, fat, in the United States.

The most dangerous type of diabetes is diabetes that is uncontrolled

What type of diabetes is the most dangerous? To answer this question I'm not going to worry about type 1 and type 2 and gestational. The most dangerous type of diabetes is the diabetes that is not controlled, the diabetes in which people don't do their fingersticks, they don't keep a record of how much sugar they have, they don't eat well, they don't exercise regularly, they don't take their medications. That's the most dangerous kind of diabetes because it can kill you. If you're like me within six months. If you're a type 2 within a couple or three years you can be dead if you don't take care of yourself. Uncontrolled diabetes is the type that is the most dangerous. Between type 1 and type 2 it's a coin toss. People live a little longer usually with type 2, but they also lose their kidneys, they lose their eyes, they lose their feet, and often they don't even know they're diabetic until they're ready to amputate toes. With type 1 diabetes at least we know right away because if we don't control it immediately we die, but they're both very serious uncontrolled and they can be lived with for a long, long time if they are well controlled.

There may be a predisposition in some people to developing type 2 diabetes, but the disease can often be prevented by eating well, exercising, and controlling stress

Is diabetes hereditary? There is evidence that there is what is called a predisposition in some people. It is easier for them to become diabetic. The good news is that if you eat right, exercise regularly, take medications if they're prescribed, and control the stresses in your life your heredity doesn't matter that much. You can still prevent type 2 diabetes. With type 1 diabetes, which is only less than 5% now of diabetics, there is very little you can do to prevent that, and it is hereditary. However, it's not automatic because there is that other part. You have to get infected with a certain disease organism and your body has to make antibodies to fight off that infection, which then turn and attack your pancreas and destroy the cells. My brother and I are both type 1 diabetics. My youngest brother has the same father, the same mother, he is now 50 years old, and he has no signs at all of diabetes even though it's type 1.

There is no cure for diabetes, but if kept under control a diabetic can expect to live a healthy life

Is diabetes curable or is it only treatable? If by curable you mean you make it go away, no, you can't. When I was being trained in diabetes education one of my instructors told me that diabetes is like true love. It lasts a lifetime. However, type 2 diabetics can often avoid going on medication. Do I sound like a broken record? By eating healthily, by exercising regularly, and by controlling the stresses in your life you may not have to take medication for years and years, and if you're caught prediabetes you may never develop diabetes, but once the diabetes develops you will always have to take care of your diet, your exercise, and your stresses. I tell patients sometimes that just one anger attack can raise your blood sugar as much as 50 mg/dl, higher than it would be if you had not had that strong emotion, so you need to learn to chill out, you need to learn to go to a place in your home where you feel safe or listen to music or read or say a prayer

or do a meditation, whatever works for you to bring your stress level down. When you're not stressed rehearse that so that when you feel the stress coming on you can do what you know is going to relax and calm you and it will keep your sugars down. That's a very important part of the therapy. It is very successfully treated, whatever the type of diabetes, if you take it seriously, but at the same time, don't panic. We sometimes have to work through the patient saying, "Oh, I have diabetes. My uncle had diabetes. He lost one foot and then the other foot and then his kidneys failed, he went blind, and he died. That's what's going to happen to me." It doesn't have to happen to you, so you need simultaneously to take it seriously and be upbeat. You can have a healthy life with diabetes. I'm standing here, 40 years a diabetic, and I'm pretty healthy for my age. Old age can cause problems.

Anyone who has signs or symptoms of diabetes should go to their doctor or clinic and ask specifically to be tested for diabetes

Where can we go to get checked to see if we have diabetes? If you have a physician, your physician should know something of your family history. Ask about a test for blood sugar. If you go to a clinic ask about a test for blood sugar if you're worried about it. If you go to an emergency room like UMC ask when you finally see the healthcare giver. Say, "You know, I have diabetes in my family," or "I've been feeling very tired lately," or "I've been urinating a lot," or "I can't quench my thirst. I'm always thirsty. I'd like a test for diabetes." Since there is an epidemic and in Central California it is higher than it is in the rest of California and in California it is higher than it is in all but two or three of the states, then you should be assertive if you are concerned or if you have family history.

Participant question: (Translation) Does high blood pressure cause diabetes?

Dr. Carl Waddle: That's an important question. Just very quickly I will tell you that there is a syndrome, and that really means a group of symptoms, which tells us that diabetes is about to develop. It's called the metabolic syndrome. It used to be called syndrome X. It is a combination of high blood pressure, higher than normal sugars, although not necessarily diabetes yet, but higher than normal, and fat in your abdomen. Fat in the abdomen correlates very well with the development of diabetes, so if you start getting fat in the abdomen you need to watch your diet and get regular exercise. Another sign is blood fats, cholesterol and triglycerides. If those begin to go high and all four of those things are present you are in the English idiom "a walking time bomb" and you're going to explode into diabetes if you don't deal with those things. But high blood pressure by itself does not cause diabetes.

Participant question: (Translation) Can eating lots of sweet fruit hurt you? Should you avoid them?

Dr. Carl Waddle: You may be surprised at what I'm going to answer. There is no food that a diabetic has to avoid. Sugar is the fuel that runs our engines. As a matter of fact, we can die as quickly from absence of sugar as we die from absence of oxygen. You may not know this, but the only function of oxygen in our bodies is to burn sugar. There is no other reason for oxygen. Imagine your fireplace. You have wood and you have air. If you take the air away the fire goes out. What happens if you take the wood away? There's no fire. The wood is the sugar in your

body and the air is the oxygen. If you take either of them away the fire of life goes out. So there is no special diabetic diet. A diet for diabetics is a diet that would be healthy for all of us. My wife is not diabetic. We've been married for 45 years. We had been married for five years when I was diagnosed as diabetic. She eats the diet I eat even though she's not diabetic and is healthier than if she were just out super-sizing at McDonald's. You can go to McDonald's, but don't get the Big Mac. Get the regular hamburger. It's got lettuce, it's got tomatoes, it's got two slices of bread, it's got some good protein in the meat. People say, "Can't have any tacos anymore." Why not? A corn tortilla is like a slice of bread. Meat is protein. Cheese is protein. Lettuce is a vegetable. Tomato is a vegetable. Salsa, that's like One-A-Day vitamins. A taco is actually a fairly healthy lunch, even two if your diet will handle it. I have people say, "The thing I hate the most about being diabetic is I can't have ice cream at my child's birthday party. And I say, "Who told you that you can't have ice cream?" "Well, everybody knows a diabetic can't have ice cream." I don't know that. One-half measuring cup packed down of regular ice cream has the same amount of sugar as one slice of white bread and as much fat as two pats of butter. Work it into your diet and on special occasions have a slice of cake, have a cup of ice cream. By the time you digest it your body can't tell the difference. It doesn't matter whether it's the starchy vegetables, grains, breads, fruit, milk, or sugar. All sugar is one kind of sugar when it goes into your bloodstream. It's a healthy meal plan, not a restricted diet. I try to avoid talking about diets because most people say that a diet is to lose weight in order to get into a dress for a dance that's coming up and then you go back off your diet. That's not what we're talking about for diabetics. We're talking about changing the way you eat so that you eat healthy all the time. You have a combination of different foods every day. The classical Greeks had a saying and it's more or less, "Moderation in all things." Not too much of anything. It was good advice 2500 years ago and it is good advice in Fresno this year.

Uncontrolled diabetes irritates the lining of the blood vessels, and this causes problems with the blood supply to all the tissues of the body

We've talked about what diabetes is but not so much about what it does. When diabetes goes uncontrolled it irritates the lining of your blood vessels, your veins, arteries, and capillaries. That causes problems with your blood supply and everything your blood supplies like your nerves. It can cause problems with kidneys. How can it be controlled? You already know enough to tell me. How is it controlled? Number one is healthy eating. Number two is exercise, and I'm not talking about power exercise. Walking is perhaps the best exercise for the diabetic. Rhythmic exercise. Whatever is rhythmic and regular and at least 20 minutes a day is a way of controlling it. It's a growing epidemic. Millions of people in the United States have diabetes. Almost one in ten has diabetes or prediabetes, but one-third of the people who are already diabetic do not know it. They have not yet been diagnosed. One of the saddest things is while a patient is being prepared to amputate a foot they discover that he has type 2 diabetes. I read recently that 50% of Hispanic males in the San Joaquin Valley do not ever go to the doctor, and that's a tragedy.

Insulin acts like a thermostat in our bodies by regulating the amount of sugar in our blood

In the non-diabetic person, most of their energy comes from sugar. We can use fat for sugar but it can cause cramps. You know the term "charley horse" that you have after you run really quick

and then you don't cool down and you didn't warm up and you get a real cramp. That's because you have begun to use fat for energy. We really shouldn't use fat for energy, and so sugar is what makes us live. All the carbohydrates, starches, fruits, milk sugar, all the carbohydrates we eat become sugar in our digestive tract. The sugar is carried to every part of our bodies, and we could not live without sugar. Very simply, we would die. A patient whose sugar goes down in the hospital is at risk. You take emergency measures. You don't wait for orders if a person is down to 20 or 15 mg of sugar per deciliter of blood. That person can die while you're looking at them. You must have sugar in your body at all times. For most of our cell types you need insulin to get the sugar into the cell. If you don't get it into the cell it stays in the blood and your blood sugar goes high but your cell starves. Your cell dies. Our pancreas makes the insulin that we need. The insulin circulates with the sugar in the blood. Remember, this is the non-diabetic, the person who does not have diabetes. It's like the thermostat on your wall. It controls your sugar automatically just like the thermostat controls the heat in your house automatically. It turns the furnace on, turns it back off. Our bodies turn the sugar up and they turn the sugar down automatically. What makes us diabetic is our thermostat breaks. We can't do it automatically anymore and so we have to take responsibility for keeping our blood sugar within normal range.

For diabetics there is either not enough insulin being made or the body's cells have become resistant to insulin

For people with diabetes everything is the same except there is not enough insulin or the body's cells have become resistant. The body's cells becoming resistant is characteristic of type 2 diabetes. Not making enough insulin tends to be more type 1 diabetes, and type 1 diabetes ultimately means no insulin at all is being made. Type 2s have both things going on, so the body is no longer able to keep the sugar level right because the automatic function has become defective. It's broken in our bodies, so too much sugar begins to be carried in the blood. It causes all of your body fluids, even your tears, to have high sugar. Unless you can make your pancreas make more insulin or you can make your body tissue more sensitive to the insulin that you do have or you inject insulin from outside then you're going to have uncontrolled diabetes, which is very dangerous. There are three things we can do if we have type 2 diabetes. Make our pancreas make more insulin, make the tissue more sensitive to the insulin we do make, or inject insulin from outside. You don't have to worry about insulin from outside. The insulin that you buy in the drug store is chemically identical to the insulin that's made in the pancreas of the human being.

Some people will say they have diabetes but they don't have sugar diabetes, which is diabetes mellitus. This is a problem with different glands, and you urinate a lot but otherwise you don't have high sugar, and so that has nothing to do with sugar diabetes. We have people in the hospital probably today who have insipidus but it's a pituitary problem or a hypothalamic problem, it's not a problem with insulin.

Participant question: What are the symptoms of the other type of diabetes, insipidus?

Dr. Carl Waddle: Just urinating too much and thirst. Whenever you're getting rid of water you're going to want water.

Participant question: Are the manifestations of that the same as the other type of diabetes and is it controlled the same way, by diet and exercise?

Dr. Carl Waddle: No. It gets technical very quickly, but diabetes insipidus has to do with the antidiuretic hormone and you're not producing enough of it and so you lose fluid through your kidneys because you don't have the normal way of recovering fluid in your kidneys.

Participant question: Is this caused by lifestyle as well?

Dr. Carl Waddle: No.

*Type 1 diabetics need to take insulin injections because the pancreas makes no insulin.
Type 2 diabetics can often control the disease with lifestyle changes alone
or in conjunction with oral medications.*

For type 1 diabetes the pancreas makes no insulin and insulin injections are the only therapy. The only choice you have is what kind of insulin, and the doctor will make that choice for you. I think there are 14 different types of insulin currently available. With type 2 the pancreas still makes insulin. You often don't have to take insulin, at least not for several years. You may be on insulin very briefly to get yourself back in control because insulin is the least damaging medication you can take, but once you're in control then it's diet and exercise, healthy meal plan and exercise. If diagnosed and treated early no medicotherapy, that means no pills and no injections, may be required for several years. The diabetes of pregnancy sometimes returns many years later. It never turns into type 1. It always turns into type 2. Some specialists think that it is pre-type 2 diabetes that causes the mother to have high sugar when she has a placenta in her uterus. When you get rid of the placenta, which makes the hormones, then you go back to normal but you already have a problem with sugar. It just doesn't manifest itself. It doesn't show itself until later in life or under the stress of a pregnancy. Some studies have indicated as many as 60% of women who were gestational diabetics will eventually become type 2 diabetics.

Participant question: (Translation) What causes sugar hunger?

Dr. Carl Waddle: It's different for all of us. Some people just like sweets. We say they have a sweet tooth in English.

Participant comment: (Translation) I'm tolerating the sweets that I eat.

Dr. Carl Waddle: Sugar is sugar. Starch is sugar. Milk is sugar. People who eat lots of bread could have the same problem as a person that eats lots of sweets. For the same weight of food, not the quantity, not the amount, but the same weight of food if it's carbohydrate it has the same amount of sugar, whether it's bread or corn flakes or fruit. By weight it is all the same amount of sugar. But if your sugar is normal then your body is handling sugar like it's supposed to, and remember, eating sugar does not cause diabetes. It may cause obesity if you eat too much of it and obesity can contribute to diabetes, but sugar in itself is simply another food and we need it every day.

Participant question: (Translation) Can experiencing an episode of fright cause diabetes?

Dr. Carl Waddle: There is no known medical way that fright can cause diabetes because diabetes has to do with other kinds of things. However, I already mentioned that strong emotions raise blood sugar and so fright could precipitate, it could cause it to become apparent. You were doing fine, you had a fright, the blood sugars went up anyway and you couldn't control them well and they say, "Ah ha! This person has diabetes." But it wouldn't be caused by the fright.

Participant question: (Translation) Can eating chocolate help to raise your blood sugar if it is too low?

Dr. Carl Waddle: Chocolate is not a good candy to eat if you have low sugar because the cocoa butter in the chocolate slows down the passage of sugar into your cells. You need pure sugar if you're trying to bring your sugar up. Again, chocolate candies get the sugar into your body significantly more slowly, so much so that we instruct patients not to use chocolate candies to try to bring blood sugar up. It won't happen fast enough. There is always the possibility of hypoglycemia, and so you really need to see a doctor if you're having the symptoms of low sugar because that can be a precursor to developing diabetes.

Participant question: (Translation) He is talking about what we often call the prickly pear cactus, nopal.

Dr. Carl Waddle: Many of you know about nopal. Nopal is a cactus. I have it growing in my backyard. I love nopalitos. Nopal is a wonderful vegetable. For people who like nopal I suggest that you include it in your list of vegetables. There is some evidence that nopal can reduce blood sugar in type 2 diabetics slightly. A person who has barely a little bit of glucose intolerance may actually be symptom free from several things. I'm not recommending this, but one glass of wine with a meal will lower your blood sugar. Nopal sometimes appears to lower blood sugar slightly. Nopal, prickly pear cactus, is a wonderful food. I love nopalitos. It does not cure anything. Diabetes is a problem either with the pancreas or with the sensitivity of tissue to insulin, and nopal can't cure either of those. So eat all the nopal you want. Vegetables are really good for you. But don't depend upon nopal to keep you from becoming blind or losing kidney function or losing your toes or your feet. It doesn't do that. There are a lot of traditional remedies that work extremely well, and I think western medicine, the medicine that we use, is just beginning to discover some of those. Even aspirin is from the bark of the willow tree. You might not know that. My mother's ancestors who were American Indians used to boil willow bark to lower fever and take away headaches. They made a tea out of willow bark, but aspirin is aceto salicylic acid and salic means willow in Latin. That's how Dr. Bayer made aspirin. It is from willow bark. But aspirin won't cure diabetes either. So use the traditional medicines. They may help a lot. But don't ever believe that you can cure diabetes by taking some pill or eating some food supplement.

Participant question: (Translation) Is aspirin good for diabetics to prevent strokes?

Dr. Carl Waddle: An aspirin does work, but that has nothing to do with diabetes. Many physicians, unless people are on what are called blood thinners, prescribe an 81 mg aspirin every

day to prevent their blood from clotting and blocking either the heart or the blood to your brain, so whether you are diabetic or not, usually one small aspirin a day is good for avoiding both heart attack and stroke.

Participant comment: I'd like to tell the students to be very careful about taking aspirin, though, because my husband was taking one aspirin every day before he went to bed and he developed two bleeding ulcers. Before we got him into the hospital he lost over 60% of his blood because, like many men, he didn't go to the doctor. So if you take an aspirin it should be a baby aspirin, not a regular aspirin. You have to be very careful.

Dr. Carl Waddle: The 81 mg aspirin used to be called baby aspirin. Enteric-coated aspirin that doesn't dissolve in your stomach avoids the problem with the stomach. Just a followup to this, 5% of all stomach ulcers are caused by aspirin. The cause of stomach ulcers in 5% of patients diagnosed with ulcer is aspirin, which makes the stomach lining bleed and permits the acid in the stomach to begin to eat away the lining of the stomach. About 90% is caused by a bacterium and the other 5% by dozens of different things that can cause ulcers, but about 5% of all stomach ulcers are caused by aspirin, so take the small one. Take the enteric coated one that doesn't dissolve until it gets down to your intestines where it won't cause any problem.

A diabetic may have a lack of energy because the muscles don't have enough sugar to work well

We talked about common signs and symptoms, classical signs. Why would you think there's a lack of energy? There's no sugar, or not enough sugar in the muscles to let them work well. You're fatigued, tired, and have blurry vision. By the way, this blurry vision is not permanent damage to the eyes. It's swelling in the lens. If you get your sugar levels down your eyes are fine. There are longterm problems with the eyes that are permanent, but the blurriness when you're first diagnosed will go away if you get the blood sugar under control.

It is very important for a diabetic to have a treatment plan. A team approach is important, but most of the management of the disease will be self-management.

You need a treatment plan if you have diabetes. The statistics tell us that a team approach controls sugar better than one person trying to control it alone. Find out about diabetes. Ninety-five percent of your treatment will be by yourself. It's called self-management. It can take months or even years. Ninety-eight percent of sugar level control is self-management. You need to start with optimism to do what you need to do to control blood sugar. A treatment plan will include a healthy meal plan, a regular exercise plan, how and when to check your sugar, your own personal goals, and knowledge of your medications, what, when, and how much. There are other health-related goals that your doctor can explain to you. Hemoglobin A_{1c} tells what your average sugar has been over a three-month period. You need to track your blood pressure because they go together sometimes. One doesn't cause the other, but they go together. Track your blood lipids. Schedule for regular checkups. Eat healthily, get exercise, take your medicine if it's prescribed, and control your stress. You can't control what you don't know, so you need to have a monitor if you are diabetic and check your blood sugar regularly. You want a balanced diet. This is the famous food pyramid developed primarily by the Department of

Agriculture, but these are the different groups of foods. You need something from all of those groups every day unless you're allergic to milk, and then you can substitute the grains and the fruits for the milk sugar, but you need to take calcium then. Everything sold in the grocery stores in the United States that is prepackaged has nutrition facts on it. There is a line, the carbohydrates total, and that's what you need to keep track of, and you'll be taught how to do that by your doctor or by your diabetes educator. Rhythmic exercise 20 minutes a day four or five times a week as a minimum. Exercise is healthy for almost everybody, but you should check with your doctor first if you've had any heart problems. Exercise is twice good for us diabetics. You can strengthen and condition the body, which exercise does for everybody, but exercise also helps us diabetics control our sugar. You need to take your medicines every day if they are prescribed. You can't say, "Well, I feel good today. I won't take my medication." Try that and tomorrow you won't feel good. You should keep a record of the medications right along with the record of what your blood sugar is. Remember, this is if you're diabetic. Report any adverse effects to your doctor or your diabetes educator. The two kinds of medication are injections, and that's all insulins, and oral medications, pills. You can't take insulin by mouth. It's a protein. You will digest it in your stomach if you take insulin by mouth. There are almost 20 different medications in the form of pills. You need to plan in advance how you're going to handle stress. You may have heard at some time about the fight or flight response. You're suddenly frightened and your heart starts racing and your sugar goes up because your body thinks you may need to fight or to run really fast and you need the sugar for your energy, but how often do we run into a tiger? I guess they ran into one down in Los Angeles yesterday, but we very seldom have to outrun or out-wrestle a tiger, and so if our sugar goes up because we're frightened we don't burn it up and our sugar stays high. This safe place in your home or at your workplace can be really helpful. If there's a place in your house where you generally feel safe and you feel yourself getting stressed go to that place. If it's in your bedroom, if it's in your living room, if it's in your kitchen, if there's a place where you feel like you're in control go there if you feel yourself stressing out. You can also use meditation or prayer to help relieve the stress. What about if you're not diabetic? I can't say this, but most of you can. But stay well. How can you do that? By eating healthily, getting regular exercise, and controlling your stress and then maybe you won't ever have diabetes. Eat a healthy diet, get regular exercise, manage your stress, keep your cholesterol down, get regular checkups, and live long and prosper.

Carmen Arambula: We're going to do a quick review and then we're going to have you ask any questions. One of the main things that we talked about here was sugar. We talked about sugar in your blood. The reason why that's important is because sugar is what your body uses for everything. If you're running, cooking, thinking, or talking your body needs sugar in order to do that, but you need to get the sugar inside your cells. The cells are in your bloodstream. They're kind of like little circles. Insulin is kind of like a door that lets the sugar in. What happens in diabetes is either, one, you don't have doors on your cells to let the sugar in so your cells are dying, or two, your doors don't work very well. That's why you're going to have a lot of sugar in your blood because it's not getting inside the cells, which is where it needs to be in order for you to use it. With type 1 diabetes, about 5%, they just don't have any doors at all, so they have no doors that let the sugar inside the cells. Those are the types of people who might have to take insulin, which helps them create doors to let the sugar in. Type 2 means your doors don't work very well, but there are things that you can do to help those doors work better.

The main things that we talked about are things that you should be doing if you have diabetes. What was number one? You're supposed to eat healthy. What was number two? Exercise. What kind of exercise? Walking, running. You want it to be regular, rhythmic exercise and it has to be about 20 to 30 minutes a day. You can't just say, "Well, I walked from one side of my house to the other and that counts."

Dr. Carl Waddle: Hard work doesn't count because it's not rhythmic. It's too technical to go into, but unless the muscles are tensing and relaxing rhythmically you don't ever start making those doors work better. Hard work doesn't open those doors. It's rhythm, dancing, walking, something that is rhythmic.

Carmen Arambula: You know those body builders, the ones who lift lots of really heavy weights? That type of exercise doesn't help. That doesn't work. You need something that has a pattern that you're doing consistently like swimming, dancing, walking, running. Those are the types of things that we're talking about. It's not so much like doing pushups for a half hour. What was the other thing that we talked about? Can you be super stressed out all the time? Does that help? No. You want to make sure that when you can you're trying to stay as calm as possible. There are lots of different things that you can do to keep calm and each person has to find that out. What were the warning signs that we talked about? What are the things that might make you know that you should go and see the doctor? What if somebody had to go to the bathroom all the time, like every 15 minutes? Then that's something that you might want to check out, because again, we're talking about sugar in the blood. When you have lots of sugar in your blood that makes you have to go to the bathroom a lot. Let's say I'm tired all the time and I'm always thirsty and I'm always hungry and I started gaining a little bit of weight in my stomach. Do you think I should be worried, or should I just go to McDonald's and order a Big Mac to make myself feel better with a sundae for dessert? No. Those are things that you might want to go and check out with your doctor. If I'm diabetic and I'm at a birthday party can I have a piece of cake? Yes. Could I have the whole cake? No. A little bit. I can have a little bit of cake and a little bit of ice cream maybe.

Dr. Carl Waddle: When I'm counseling with my patients I tell them that a half of a cup of ice cream is the same as a slice of bread and two pats of butter. If it's low-fat ice cream it's just the same as a slice of bread, and then I say, "But I didn't say half a gallon. I said half a cup."