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Resident Characteristics & Assessments
Diabetes

Understanding Diabetes

An estimated 20 million Americans live with diabetes - that's 6 percent of the population. But what exactly is diabetes? Diabetes is a relatively common metabolic disorder that affects the way the body uses food for energy and growth. The food we consume is converted into glucose, or simple sugar, which enters the bloodstream as a source of fuel. Insulin, a hormone produced by the pancreas, helps regulate the level of glucose in the blood and how glucose is used. People with diabetes, however, experience insulin failure, resulting in elevated levels of blood sugar. This causes both the short term symptoms of diabetes, like excessive thirst, and often damages the body's organs in the long term. The way in which insulin fails determines how a diabetic is classified. There are three types of diabetes: Type 1, Type 2 and Gestational diabetes. Type 2 diabetes is by far the most common, making up 90 to 95 percent of new cases of diabetes. Thomas Edison may be best known for inventing the light bulb, but the Wizard of Menlo Park was also a member of the large Type 2 diabetic population. Due to insulin resistance, a condition related to excess body fat, Type 2 diabetes usually develops in obese people. This condition occurs when a normal amount of insulin no longer suffices, causing blood sugar to rise. The pancreas responds by making extra insulin to lower the sugar. Diabetes results when the pancreas can't keep up. Other times, Type 2 diabetics just stop producing enough insulin with a similar result. Type 2 diabetes usually arises in people who are at least twenty pounds' overweight and over forty years old. A family history of diabetes plays a large role, as does ethnicity, with most cases occurring among Native American, Hispanic and African American descent. In contrast to the frequency of Type 2 diabetes, Type 1 diabetes makes up only 5 to 10 percent of new cases. Type 1 diabetes occurs when the body's immune system gets confused and starts to destroy the cells that produce insulin. In response, the pancreas stops making insulin altogether. People with Type 1 diabetes must take insulin daily, yet the injections don't hold them back from leading full lives. Just ask Type 1 diabetic Halle Barry, who has an Emmy, a Golden Globe and an Academy Award under her belt. Type 1 diabetes was once known as 'juvenile diabetes,' since it's usually diagnosed in people under twenty. Type 1 diabetics are frequently Caucasian. The third type of diabetes, gestational diabetes, occurs in 7 percent of pregnancies, probably because pregnancy hormones reduce receptiveness to insulin. Women are more likely to contract gestational diabetes if they have a family or personal history of diabetes, or if they are of non-Caucasian ethnicity. Although diabetes is currently incurable, there are a number of treatments that can allow diabetics to live healthy, normal lives. Remember, diabetes can't be self-diagnosed, so please see a doctor if you have a family history of the disease or concerns about your health.

Symptoms of Diabetes

An estimated one third of people living with diabetes have no idea that they have it. Avoid being one of them by knowing what to watch out for. The symptoms of diabetes are often subtle, like mild fatigue or minute weight loss, so the first line of defense against remaining undiagnosed is knowledge. Being aware of your family's medical history and your risk level is imperative to the early detection of diabetes. Had blues legend and diabetic B.B. King known his family's history, he might have been better able to manage the disease that kept him tired and weak for years. When King was finally diagnosed with Type 2 diabetes in his early 60s, the musician realized that the deaths of his mother, father, sister and niece were all due to untreated diabetes. Knowledge of your family's history of diabetes, heart disease and high blood pressure may help you avoid a late diagnosis and illness like B.B. King's. If these complications are in your background, or if you are overweight, understand your risk for developing diabetes is greater. It's also important to be aware of the symptoms that are detectable in the early stages of diabetes. The signs of Type 1 diabetes usually develop over just a few days, due to hyperglycemia, a rapid rise in glucose. Type 1 diabetics often complain of excessive thirst or hunger, sometimes accompanied by a dry mouth. Despite an increase in appetite, Type 1

diabetics often lose significant amounts of weight very quickly. Other symptoms include the need to urinate frequently, blurry vision or increased fatigue. Unlike people with Type 1 diabetes, those who develop Type 2 diabetes do so gradually, with minor-and sometimes no-symptoms that crop up over long periods of time. Often, they are not even diagnosed until after the complications of the disease occur. People who develop Type 2 diabetes may experience numbness or tingling in their hands and feet, sores that take a long time to heal or blurry vision. Women may contact frequent yeast infections, while some males complain of unforeseen impotency. Prior to the onset of Type 2 diabetes, many people develop a symptom-free condition called pre-diabetes. This occurs when glucose levels are elevated, but not yet high enough to be considered full-blown Type 2 diabetes. Because pre-diabetes has no discernible symptoms, it's important to get tested for the disease if you have a family history of diabetes or if you're overweight. People of non-Caucasian descent are also more likely to develop pre-diabetes. The symptoms of diabetes are subtle and sometimes don't seem serious, but the long-term ramifications are severe. Luckily, early detection and treatment can prevent organ damage. If you experience any of the symptoms outlined in this video or if you are a high-risk candidate for developing diabetes, see your doctor for a blood glucose test.

CONSEQUENCES OF DIABETES

Diabetes is currently the fifth deadliest disease in the United States, claiming the lives of almost two-thirds of all diabetics. Because so many diabetics are not diagnosed until after a life threatening complication arises, the death rate from diabetes is staggering. In fact, diabetes has taken the lives of some of America's most beloved icons. In her glory days, Ella Fitzgerald was one of the most recognizable voices in America. The ‘First Lady of Song’ had a recording career like none other, winning 13 Grammy Awards over an astounding 57 years. Sadly, the songstress was diagnosed very late in life with Type 2 diabetes and underwent quintuple coronary bypass surgery as a result. Ella's diabetes also caused her failing eyesight and the amputation of both her legs below the knees. Unfortunately, the complications that Ella suffered are not rare. Left untreated, or treated incorrectly, diabetes can lead to a combination of serious and life-threatening effects. Diabetics often suffer from high blood pressure, which can lead to death by heart attacks or strokes. Sometimes diabetes causes nervous system damage which can result in limb amputations. Other common side effects include blindness, dental disease and sexual dysfunction. A complete list of diabetic side-effects can be overwhelming. Sometimes, it helps to look at each individually to understand why diabetes causes the complications it does. Up to 73 percent of diabetics’ experience high blood pressure, which means that their hearts have to work extra hard to move blood through their bodies. As a result, blood can get blocked or stopped, resulting in a heart attack or stroke. Although diabetes does not cause high blood pressure, having the disease makes it more likely that you will also have this condition. Some complications of diabetes are not life threatening, but still serious. For example, because diabetes can affect blood flow to the genitals, men with the disease occasionally experience erectile dysfunction while diabetic women can battle low sex drives and vaginal dryness. Diabetes can affect the blood vessels in the eyes and is the current leading cause of blindness in people over twenty. Additionally, the excess blood sugar found in a diabetic's mouth doubles the odds that he will develop periodontal disease. Diabetics can also suffer from poor blood flow in their limbs, which may lead to nerve damage. In extreme cases, this can result in lower limb amputations, like Ella Fitzgerald's. Other minor complications of diabetes include wounds that take too long to heal, numbness or tingling in the appendages, and bladder infections. But, with early diagnosis and treatment, these consequences can be avoided. If you do think you may have diabetes, seek treatment from a health care professional immediately.

UNDERSTANDING PRE-DIABETES

Before people develop Type 2 diabetes, they usually have pre-diabetes. Since 54 million Americans have this condition, it's vital to know What is pre-diabetes? Pre-diabetes, also known as impaired fasting glucose, is a condition that occurs when blood glucose levels are higher than normal, but are not high enough to be considered full-blown diabetes. More than 55 percent of pre-diabetics go on to develop Type 2 diabetes, but there's good news – the chance of developing Type 2 diabetes can be

reduced by more than half with simple lifestyle changes. Take a look at these three very different people. Which one of them do you think has the high blood glucose that equates to pre-diabetes? Actually, you can't tell just by looking. Pre-diabetes is an asymptomatic condition that can happen to anyone. There are certain people, however, who have a higher risk of developing the condition and should be extra cautious. People who are obese or over 45 are more likely to be among the millions who currently have pre-diabetes. The condition also occurs more often in tobacco users and those of non-Caucasian ethnicity. If you are in a high-risk group, you should be checked at your next doctor's appointment, and annually thereafter. Even those with normal blood glucose levels should be tested every three years. To determine if you have pre-diabetes, your doctor will give you a fasting plasma glucose test or an oral glucose tolerance test. Both tests measure blood sugar after fasting and the oral test also measures it after you consume a sugary drink. Normal fasting blood glucose is below 100 mg/dl but a person with pre-diabetes has a fasting level between 100 and 125 mg/dl. With the oral test, when glucose levels are measured after sugar consumption, normal glucose should be below 140 mg/dl. Levels between 140 and 200 mg/dl are defined as pre-diabetes, while readings higher than 200 qualify a person as a diabetic. Fortunately, if you have pre-diabetes, a few lifestyle changes can help you avoid becoming a Type 2 diabetic. Losing between five and ten percent of your total body weight is the key to preventing the onset of Type 2 diabetes. Moderate exercise, such as walking 30 minutes a day, five days a week, is a good way to facilitate this necessary weight loss. A healthy diet low in simple sugars and rich in whole grains, fruits, vegetables and healthy proteins, is also a good way to attain the weight loss that helps treat pre-diabetes. These simple lifestyle changes will not only prevent the onset of Type 2 diabetes, they can also help turn back the clock on pre-diabetes, returning elevated glucose levels to a normal range. Because pre-diabetes has no symptoms, remember to ask your doctor to test you during your next visit, especially if you are at high risk for developing the condition.

Treatment of Type 1

If you've been diagnosed with Type 1 diabetes, you'll need to administer insulin daily. Insulin therapy is life-changing, but necessary for Type 1 diabetics. Type 1 diabetics don't produce the insulin necessary to move blood sugar through their bodies. Because of this, they must manually inject this vital hormone. After being diagnosed with Type 1 diabetes, it is natural to have questions about insulin therapy. As a child, mountaineer Will Cross felt that his diabetes diagnosis meant that he could never pursue his ‘high’ aspirations. But after getting used to his daily injections Will began climbing again, and in 2005, he became the first diabetic to scale Mount Everest. Let's begin by looking at why daily insulin is necessary for Type 1 diabetics. People become Type 1 diabetics when their immune systems start to destroy the beta cells that make insulin. Because of this, the pancreas can no longer produce this essential hormone. To combat this shortage, insulin needs to be administered in a manner that mimics the secretion of the pancreas. Since every diabetic has different lifestyle patterns, your doctor will choose from a variety of insulin types and injection methods to treat your diabetes. Insulin comes in a variety of forms, from long-lasting to briefly intense. That is why your doctor might suggest a combination of insulin. For example, a patient could take a dose of insulin, like NPH, in the morning and evening as well as injections of an intermediate-acting variety, like Humalog, before meals. Whatever forms of insulin are used, there are three FDA approved ways to administer it. The most common delivery method is the pre-filled insulin pen. The pen-sized device holds an insulin cartridge, which is administered by a needle that penetrates just under the skin. Some pens are disposable while others require a replacement needle and cartridge after each injection. Although the pre-filled pen is a great method for many diabetics, some people dislike injections and may prefer an insulin pump. An insulin pump is a device about the size of a pager that is worn outside of the body. It has a tube that connects the insulin to a cannula inserted into the abdomen. The pump then dispenses a programmed amount of insulin into the body through the cannula. The third and newest form of insulin on the market is called Exubera. This delivery method is inhaled into the lungs through a device that looks like an asthmatic's pump. Inhaled insulin comes in dry blister packs that are inserted into an inhalation device. Since this method is fast acting, but short lasting, it may be best to use it in conjunction with an all-day insulin. No matter what delivery system is used, it is important to

be vigilant in taking your insulin. If you're not comfortable with your current insulin plan, discuss alternatives with your doctor.

Treatment of Type 2

The treatment of Type 2 diabetes usually includes oral medication. But with so many choices out there, it can help to know how these prescription drugs work. There are two kinds of Type 2 diabetics – people who produce too little insulin and people who produce too much. Medications take these distinctions into account, and prescriptions are available to treat both types of insulin failure. Diabetics who have become resistant to their own insulin can choose from several different types of medication to combat this difficulty. One type of medication controls insulin resistance by decreasing glucose production. The most common, metformin, is also available under the brand name Glucophage. When Sopranos star Aida Turturro was diagnosed with Type 2 diabetes, she began taking metformin to decrease her overactive glucose production. Aida's energy and health quickly skyrocketed and she went on to earn an Emmy nod. In contrast, the second group of Type 2 diabetics don't produce enough insulin. When this happens, a doctor will prescribe one of two types of medication that increase the output of insulin by the pancreas. The first type of drugs that increase insulin output can last for an entire day. The most commonly used, glyburide is also sold under the brand name Glucotrol. The second group of these drugs mimics the natural action of the pancreas and takes an hour to reach maximum efficacy. Available as generic drugs and under the brand names Prandin and Starlix, this group is somewhat less effective and is therefore used more infrequently. Some Type 2 diabetics take insulin injections in addition to their daily medication. These individuals may benefit from taking their medication in injectable form. Symlin and Byetta are just such medications, which can help patients being treated with insulin improve their glycemic control. Both Symlin and Byetta are taken in injection form prior to meals and may also help patients to lose weight. Each of these medications, or combinations of them, can be extremely helpful for lowering blood sugar. However, it is important to talk to your doctor about the dosage, cost and possible side effects of each. Not every medication is ideal for every diabetic, so be sure to follow Aida Turtturo's example and work with your physician to find the optimal regimen for you.

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