

## Understanding Diabetes

Diabetes is a disease in which a person's blood glucose (blood sugar) is too high. When you eat, some of the food is broken down into a type of sugar called glucose, which is the main source of energy for your body. In your body, there is an organ called the pancreas that makes insulin. Insulin is a hormone that helps move glucose from your blood into the cells of your body for the use of energy. People with diabetes have high level of blood glucose or sugar because their pancreas is not making enough insulin for their bodies or their blood cells have trouble using insulin. Since there is not enough glucose moving into your cells, it builds up in the blood and causes your overall blood glucose/sugar level to rise.

## Types of Diabetes

There are three main types of diabetes:

- **Type 1 Diabetes:** People can get type 1 diabetes at any age, but it is often found in children, teens, or young adults. This type of diabetes happens when the body's immune system (the system in your body that protects you from diseases and infections) attacks and destroys cells that make insulin in your pancreas. Because of this, the pancreas is making little or no insulin. People with type 1 diabetes must take insulin everyday in order to live.
- **Type 2 Diabetes:** This is the most common type of diabetes. 90% to 95% of people with diabetes have type 2. It is often found in people who:
  - are of older age
  - are obese
  - have a family history of diabetes
  - have previous history of gestational diabetes (*to be discussed below*)
  - are not physically active
  - are from certain ethnicities

About 80% of people with type 2 diabetes are overweight or obese. Because of the high obesity rates, more teens and young adults are being diagnosed with this type of diabetes early in life. In type 2 diabetes, the pancreas is usually making enough insulin. However, your body has trouble responding to insulin, which is a condition called *insulin resistance*. Since the insulin is not being used effectively, less blood glucose/sugar are moved into the cells and builds up in the blood.

- **Gestational diabetes:** Gestational diabetes is a type of diabetes that happens only during pregnancy. A pregnant woman may have high level of blood sugar because the hormones during pregnancy can lead to insulin resistance. Although, this type of diabetes usually disappears after the baby is born, the woman has a 40% to 60% chance of getting type 2 diabetes later in life. However, maintaining a reasonable body weight and being physically active may prevent it.

## Symptoms

Common signs of diabetes are:

- Being more thirsty than usual
- Urinating often
- Feeling hungry and tired more than usual
- Losing weight without trying
- Having sores that heal slowly
- Losing feeling in feet
- Having tingling feeling in the feet
- Blurry vision

Unlike type 1 diabetes, the symptoms grow more gradually for people with type 2 diabetes to the point where some people don't even notice any symptoms. However, damage may already be happening to their eyes, kidneys, and heart. The only way to know if you have diabetes is to go see your doctor or health care provider and get a blood test.

## Diagnosing Diabetes

There are three common tests used to diagnose diabetes:

- **Fasting Plasma Glucose (FPG) Test:** This test is done after a patient fasts for at least 8 hours before the test. Fasting is when a person does not eat any food or drink anything, except for water. To check a person's blood sugar level, a sample of blood is taken. The normal range of a person's blood sugar after fasting is between 60 mg/dL and 99 mg/dL. If your blood sugar levels are between 100 mg/dL to 125 mg/dL, you are considered to be prediabetic. Prediabetes is when a person has a higher than normal blood sugar level, but it is not high enough to call it diabetes. People with diabetes have a blood sugar level of 126 mg/dL or higher.
- **Random blood sugar test:** This blood test can be done whether or not you are fasting. To check a person's blood sugar level, a sample of blood is taken. If you have symptoms of diabetes and a blood sugar level of 200 mg/dL or higher, you may have diabetes.
- **Oral Glucose Tolerance (OGTT) test:** For this test, you would have to fast for at least 8 hours. You would then drink a liquid of 75 grams of glucose in water. After 2 hours, your blood glucose or blood sugar level will be measured. If it is higher than 200mg/dL, you would be diagnosed with diabetes.

During pregnancy, pregnant women normally have lower sugar or glucose levels so the cut off levels for diagnosing diabetes would be lower.

## Diabetic Treatment and Management

Diabetes can't be cured. However, a person with diabetes can still have a long and healthy life by controlling it. If left untreated, diabetes can lead to serious health problems of your blood vessels,

nerves, heart, kidneys, eyes, feet, and mouth. It can also lead to an amputation, which is a surgery to remove a damaged part of your body like a toe, foot, or leg. You can control your diabetes by:

- Having regular checkups with your doctor/health care provider
- Eating right
- Exercising
- Checking your blood glucose level
- Taking prescribed medications
- Learning about diabetes

The treatment and management of diabetes can vary from patient to patient, and your doctor or health care provider can help you decide what form of treatment is best for you.

**Regular Check Ups:** People with diabetes should meet with your doctor or health care provider regularly (every three to six months) to check your health. During these visits, your provider or doctor should pay special attention to your blood pressure, weight, and feet. During foot exams, they should check the pulses and reflexes of your feet and look for calluses, infections, sores, and loss of feeling. You should also tell them if you have been noticing any cuts, sores, red spots, and swelling on your feet. To see how well you have been controlling your diabetes, your doctor or health provider will want a hemoglobin A1C test. This test requires a sample of your blood to see the average of your blood sugar level in the past 3 months. You should have this test done at least twice a year. Once a year, you should also have your eyes and kidneys checked to see if the diabetes had damaged them. People with type 2 diabetes should also take a cholesterol test because high cholesterol will make it harder for you to manage your diabetes. Beside your primary doctor or provider, the following people can also help you with your diabetes:

- Endocrinologist (a doctor who is specialized in diabetes care)
- Dietitian
- Nurse
- Eye doctor
- Other certified diabetes educators.

**Eat Healthy:** People with diabetes should eat:

- foods **low** in saturated fat, trans fat, cholesterol, salt, and sugar
- lots of complex carbohydrates (whole grains)
- foods rich in fiber (fruits and vegetables, nuts, and beans)
- dairy products
- meat, poultry, fish, dairy products, and eggs
- healthy fats

Healthy eating also means eating the right portions or amount of food. By eating healthy, it will help you to reach and stay at a healthy weight and prevent heart and blood vessel diseases. It will also keep your blood glucose, blood pressure, and cholesterol levels under control.

**Staying Active:** Physical activity is very important in staying healthy and controlling your blood sugar levels. Some benefits of being physically active are:

- helping you reach and stay at a healthy weight
- helping insulin to work better at lowering your blood sugar
- giving you more energy
- improving the health of your heart and lungs
- relieving stress

Ways you can be physically active includes:

- exercising
- playing sports
- dancing to music
- taking a walk
- jogging
- bicycling
- swimming

**Monitor Your Blood Glucose Level:** At home, you can also check your blood glucose levels by using a blood glucose meter called a glucometer. To check your blood sugar levels, you will need to prick your hand so the device can measure your blood glucose levels from a drop of your blood. Checking and recording your blood glucose levels can help you to better manage your diabetes. Ask your doctor how often you should check your blood glucose levels and make sure you keep a record of it. You may also want to check if your health insurance can pay for the glucometer and the test strips you need.

**Taking Prescribed Medications:** You should take the medications your doctor gives to you. There are different types that can be taken by mouth or injected into your body. You may also have to take more than one type of diabetes medicine. Your doctor or health care provider will help you decide which ones are best for you. If your medications make you feel sick or cause any problems, you should tell your doctor or health care provider. When taking medications, it is important to keep your blood sugar from going too high or too low. If your blood glucose levels drop too low, a condition known as hypoglycemia happen. A person with hypoglycemia may become:

- very tired or weak
- nervous or upset
- shaky or dizzy
- confused

- sweaty

If you become hypoglycemic, you will need to eat or drink 15 grams of fast acting carbohydrates. Some examples are:

- 4 oz (1/2 cup) of fruit juice
- 4 oz (1/2 cup) of nondiet soda pop
- 3 or 4 glucose tablets (5 grams each)
- 5 to 6 hard candies

If your blood glucose is still too low after 15 minutes, eat or drink another 15 grams of fast acting carbohydrates.

**Coping with Diabetes:** It is not easy to manage diabetes. However, there are ways you can cope with it. One way is to learn more about diabetes from different resources so you can have a better understanding on how to take care of yourself everyday. Another way of coping with diabetes is learning how to lower your stress level because stress can raise your blood sugar. Some ways you can cope with stress are:

- Meditating
- Gardening
- Working on a hobby
- Listening to music
- Taking a walk

You can also join a support group to talk with other people who have diabetes. This will give you an opportunity to share your experiences and find support from people who are going through the same situation

## Sources

4 Steps to Manage Your Diabetes for Life (2014, April 1). In *National Diabetes Education Program*. Retrieved 2015, from <http://ndep.nih.gov/publications/PublicationDetail.aspx?PubId=4&redirect=true>

Diabetes (2014, May). In *FamilyDoctor.org*. Retrieved 2015, from <http://familydoctor.org/familydoctor/en/diseases-conditions/diabetes.printerview.all.html>

Diabetes (2014, August). In *NIHSeniorHealth*. Retrieved 2015, from <http://nihseniorhealth.gov/diabetes/symptomsanddiagnosis/01.html>

Diabetes and You. (2013). In *Cornerstones4Care*. N.p.: Novo Nordisk.

Diabetes Introduction (n.d.). In *MedlinePlus*. Retrieved 2015, from <http://www.nlm.nih.gov/medlineplus/tutorials/diabetesintroduction/id029107.pdf>

Diagnosis of Diabetes and Prediabetes (2014, September 10). In National Diabetes Information Clearinghouse (NDIC). Retrieved 2015, from <http://diabetes.niddk.nih.gov/dm/pubs/diagnosis/>

Your Guide to Diabetes: Type 1 and Type 2 (2014, February 12). In National Diabetes Information Clearinghouse (NDIC). Retrieved 2015, from <http://diabetes.niddk.nih.gov/dm/pubs/type1and2/index.aspx>