



Diabetes Discriminates.

A Guide for Transplant Recipients

**Why should I read a booklet
about diabetes?**

The purpose of this guide is to make you aware of the risk of diabetes and the increased risk of diabetes in certain individuals. If you are a transplant recipient or on a waiting list to receive a transplant, the guide will help you to understand what diabetes is and how it is diagnosed and treated. More importantly, the guide describes what you can do about diabetes today by discussing diabetes risk with your doctor or transplant team.

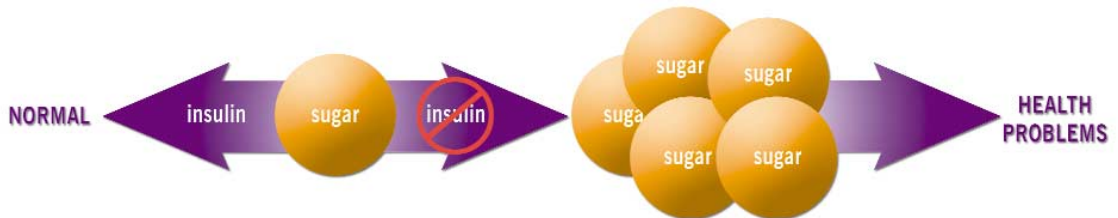
WHAT IS DIABETES?

To understand what diabetes is, it is important to first understand that some of the foods we eat, mainly carbohydrates and fats, are converted into glucose, or sugar. Our bodies use sugar as a source of energy. For sugar to be turned into energy, we need a hormone called insulin, which is produced by the body.



In a healthy person: Insulin helps the body change sugar into energy.

When you have diabetes, your body cannot make enough insulin and/or cannot use its own insulin as well as it should. Without the right amount or proper use of insulin, sugar builds up in the blood, which can lead to serious problems that can threaten life, including damage to the nervous system, the eyes, the kidneys, and blood vessels.



In a person with diabetes: Insulin fails to do its job. Sugar builds up in the blood, often leading to serious health problems.




WHY IS DIABETES IMPORTANT?

Diabetes is a common disease. About 17 million people in the United States have diabetes. One third of these people (almost 6 million) may have the disease and not even know they have it.

You have probably heard of diabetes and you may even know someone with diabetes. But you may not know why it is important for you personally to be aware of diabetes.

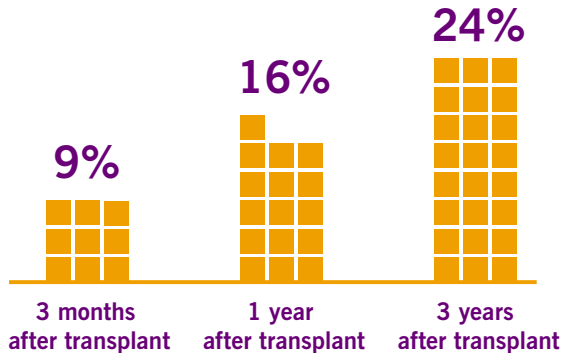
Diabetes is a serious disease that is linked to heart disease, high blood pressure, stroke, blindness, kidney disease, amputation, and many other serious complications.



Transplant Recipient
Family History

More than
6% of the U.S.
population has
diabetes.

For transplant recipients, diabetes is an even greater threat. Diabetes that develops after transplantation is usually called new onset diabetes or post-transplant diabetes mellitus (PTDM). All of these terms refer to the same disease, and it's important to understand that after transplantation your chance of developing diabetes increases and continues to increase over time.



**THE PERCENTAGE OF KIDNEY
TRANSPLANT PATIENTS
WHO DEVELOP DIABETES
INCREASES OVER TIME**

For transplant recipients, there are added concerns. Diabetes is a leading cause of *end-stage renal disease*, a condition that may lead to the need for an additional transplant. Diabetes that happens after transplantation may put your organ at risk or shorten the length of time that your new organ will last.

Diabetes after
transplantation
is linked to
serious problems.



AM I AT RISK FOR DIABETES?

It is important to realize that diabetes can affect anyone, but diabetes discriminates. In other words, there are certain people who are more likely to be targets for diabetes. These people are said to have *risk factors*. Knowing your own risk factors can help you and your doctor do everything possible to keep diabetes from entering your life.

Risk factors for diabetes include ethnic background, weight, family history, age, and other factors. As mentioned, receiving a transplant increases a person's chances of developing diabetes.

For transplant recipients, some risk factors *cannot* be changed. These include African American or Hispanic ethnicity, family history, hepatitis C virus infection, and older age. Transplant recipients that fall into these groups are at higher risk of diabetes. Other risk factors, like obesity, *can* be changed. By losing weight, a transplant recipient can reduce the risk of diabetes.

**Certain therapies
are linked with
a higher risk
of diabetes.**

Another example of a risk factor that can be changed is the type of medication transplant recipients take. Transplant recipients need to take a number of medications to prevent the body from rejecting the new organ. These medications are called *immunosuppressive drugs*. While most immunosuppressive drugs may increase the risk of diabetes, certain immunosuppressive drugs have been linked with a higher incidence of diabetes than others.



WHAT CAN I DO ABOUT DIABETES?

If you are a transplant recipient or are on the waiting list for a transplant, it is imperative that you talk to your doctor about monitoring your diabetes risk and taking steps to reduce the risk and manage the disease.

Diabetes often goes undiagnosed because many of the symptoms seem “harmless.” For this reason, you should be watchful of the signs and symptoms of diabetes and report any of the following immediately to your transplant team. Early detection and treatment of diabetes symptoms may reduce your chance of developing diabetes complications.

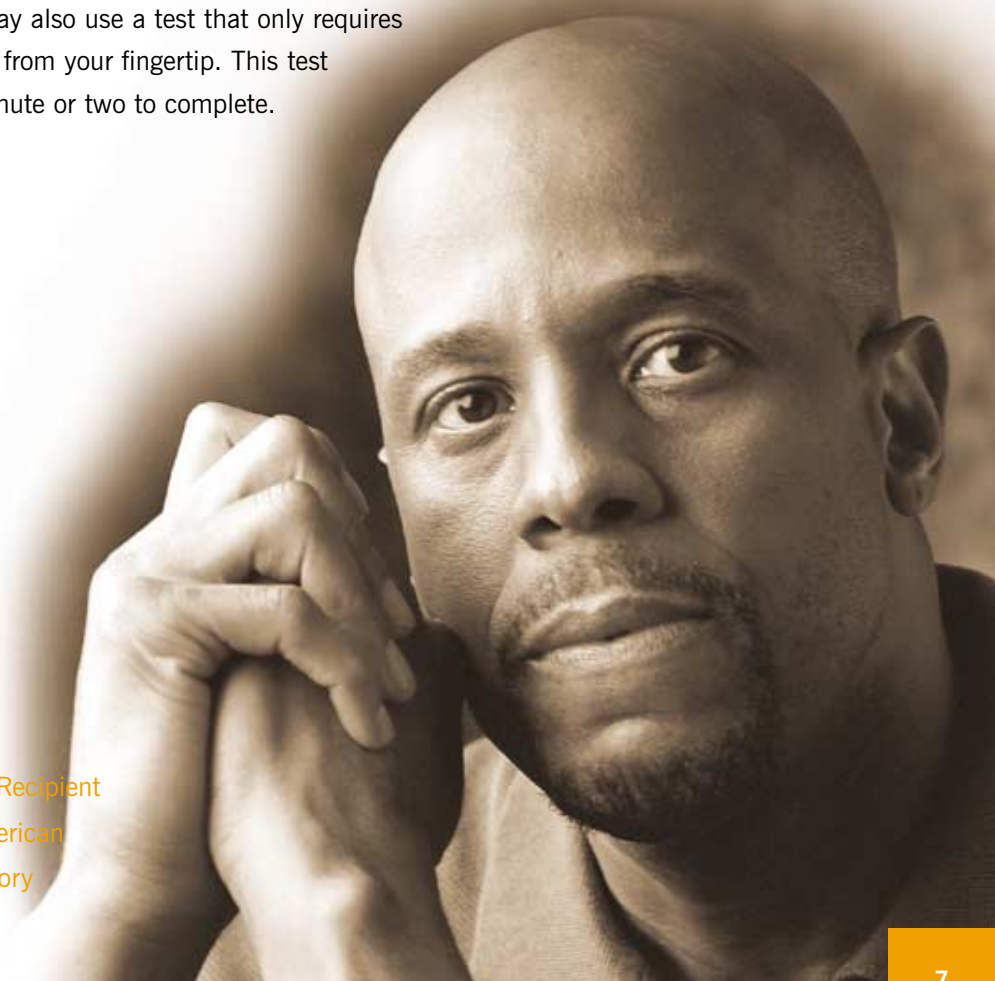
Watch for these symptoms and contact your doctor if you have one or more of the following symptoms:

- Frequent urination
- Excessive thirst
- Extreme hunger
- Extreme tiredness
- Tingling or numbness in hands or feet
- Sudden vision changes
- Irritability
- Unexpected weight loss

**Talk to your doctor
to find out if
you are at risk
of developing
diabetes.**

Watching for symptoms is just one way to look out for diabetes. Your doctor can also perform simple blood tests to test for diabetes. *Screening tests* are performed if a person has no diabetes symptoms. These tests are easy, fast, and inexpensive. Usually, blood is drawn and sent to a laboratory for results. Some offices may also use a test that only requires a drop of blood from your fingertip. This test takes only a minute or two to complete.

- Transplant Recipient
- African American
- Family History



Diagnostic blood tests are done to confirm a diagnosis of diabetes.

Diagnostic tests are done to confirm a diagnosis if a person is suspected of having diabetes. For a diagnostic test, a blood sample is drawn and sent to a lab to be analyzed. There are different types of diagnostic tests, so you should be aware that comparing the results with family or friends who have had a different test could lead to confusion.

Some physicians may choose to do a glucose tolerance test. Results of these blood tests will tell if your blood glucose levels increase sharply when you eat. Blood glucose levels in people without diabetes are not greatly affected by the foods they eat because insulin allows glucose to enter the cells of the body to be converted into energy. In a person with diabetes, there is not enough insulin, or insulin is not doing its job properly and glucose builds up in the blood. Too much glucose will pass through the kidneys, which causes frequent urination and excessive thirst. The presence of these symptoms may also be used to diagnose diabetes in some people.

Transplant recipients or those awaiting transplantation should take an additional step. Discussing your immunosuppressive therapy, or intended therapy, with your transplant team is vital to ensure that you receive treatment with the least potential to increase your risk of developing diabetes.

Discuss your transplant therapy with your doctor to avoid unnecessary risk.



WHAT IF I'M DIAGNOSED?

If you are diagnosed with diabetes, you should first be aware that talking to your doctor is your best course of action. Telling your doctor or nurse is important because they know best how to handle any concerns or problems you may have.

Although there is no cure for diabetes, it can be treated. Your doctor will recommend steps you can take to help you maintain your overall health. Nutrition is important because the food you eat influences your blood glucose levels. Following the diet your doctor prescribes for you will help you keep glucose as close to normal levels as possible.

Exercise is also recommended as part of the treatment program for all patients with diabetes. Your doctor may also recommend weight loss and reducing stress. Practicing good oral health, foot care, eye care, and skin care will be recommended to avoid complications that can occur later.

In addition to exercise and overall good health, you may require oral medications or insulin to make up for lack of insulin in your body or your resistance to the effects of insulin. Depending on your body's individual needs, you may require frequent insulin injections to keep your blood sugar near normal. In some cases, it may be possible to decrease or eliminate the need for insulin or oral medications over time.

Talk to your doctor about the immunosuppressive medications you are taking. Ask if any changes to your medication would make a difference in your long-term health.

It will be important to monitor your blood sugar regularly. In addition to office visits to check your blood sugar, your doctor may recommend that you self-monitor using a blood glucose monitoring kit. This kit includes a spring-loaded device that has a special needle you can use to draw a drop of blood from your forearm, thigh, or hand. The kit includes a meter with a readout that allows you to see your blood glucose level in a matter of seconds.

Although there is no cure for diabetes, it can be treated.

Keeping blood sugar as close to normal as possible is important to avoid damage to the nervous system, the eyes, the kidneys, and blood vessels. Keeping a record of your blood sugar levels will allow you to show your doctor how your body is responding to therapy.



WHERE CAN I FIND OUT MORE?

Your doctor and healthcare staff are the best sources of information regarding diabetes and your overall health. Keeping your doctor informed on a regular basis will help you maintain your health and keep diabetes in check.

- 
- Transplant Recipient
 - Hispanic
 - Advanced Age



Seeking support from your family and friends will also be important because they will keep the dialogue going between your doctor visits. There are also support groups that you can join if you are willing to discuss your condition with others who have diabetes.

If you are interested in finding out more about diabetes, there is an abundance of information available on-line. The following is a list of some reliable resources on the Internet for information about diabetes:

**Your doctor
and healthcare
staff are the
best sources of
information.**

American Diabetes Association: www.diabetes.org

American Association of Diabetes Educators (information for the general public):
www.aadenet.org/

CDC Diabetes Public Health Resource (Centers for Disease Control and Prevention):
www.cdc.gov/diabetes/

National Kidney Foundation: www.kidney.org

**National Institute of Diabetes and Digestive and Kidney Diseases of the
National Institutes of Health:** www.niddk.nih.gov

Joslin Diabetes Center (affiliate of Harvard Medical School):

www.joslin.harvard.edu/main.shtml

MEDLINEplus: Diabetes (U.S. National Library of Medicine/National Institutes of Health): www.nlm.nih.gov/medlineplus/diabetes.html

DIABETES DISCRIMINATES.

You Can Take Action

Checklist for transplant recipients:

- Understand why diabetes is important
- Know your own risk for diabetes
- Recognize the signs and symptoms of diabetes
- Talk to your doctor about your transplant therapy
- Seek the support of your family and friends
- Know where to go for more information

Talk to your transplant team *today* about diabetes prevention and management.

The information in this booklet was provided as a service from



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