

# D2d Type 2 Diabetes

Introduction: This handout will provide you with helpful information about type 2 diabetes. If you have been diagnosed with diabetes during a D2d study visit, it is very important to share the study test results with your primary care physician and discuss treatment options with her or him.

## *Understanding Diabetes*

Diabetes means that you have too much sugar in your blood. Because you were chosen to be in D2d we knew you already had slightly high sugar levels. Now those levels have become higher and may need treatment. The good news is that with treatment, which should include a healthy diet, exercise and maybe medication, diabetes can be controlled and you can live a long and healthy life. However, ***it is very important that you follow up with your healthcare provider*** and always make sure you keep your blood sugar levels in your target range throughout the rest of your life.



When you have type 2 diabetes, your blood sugar levels increase because your body doesn't make quite enough insulin and the insulin it makes doesn't work as well. Type 2 diabetes tends to run in families. You may have a relative who has had diabetes. Some people have seen relatives experience problems as a result of their diabetes, but with newer treatments, your doctor can help you avoid the problems diabetes can cause.

## *Blood Sugar and Energy*

Your body needs sugar, also called glucose, for energy. This sugar can come from the carbohydrates you eat. Carbohydrates are simple sugars that are found in fruit juice, milk, soda pop, candy or table sugar, as well as complex starches that are found in vegetables, whole grains, rice, potatoes and pasta. Your body can also make sugar by breaking down its own stores of protein. Normal blood sugar levels are needed to give you the energy to be healthy. High levels can cause harm.

## *What is insulin?*

Insulin is a hormone, or chemical, that your body makes to help move the sugar from your blood into your cells where it can be used for energy. Insulin is made in the ***pancreas***, an organ located behind the stomach. Without insulin, your cells can't get the sugar they need to keep you healthy. By moving sugar from your blood into your body's cells, insulin helps keep your blood sugar level in a good range (not too high; not too low). **When your blood sugar levels are regularly too high and your body is not able to keep your blood sugar levels in a good range, you have diabetes.**





Glucose



Insulin



Cell

## *How does insulin affect blood sugar levels?*

After a meal, your blood sugar level rises, and the pancreas reacts by releasing insulin into the blood. Insulin and sugar then both travel to cells throughout your body. Insulin works like a key that allows the sugar to enter the cells.

## *Managing Diabetes*

### *Why take care of your diabetes?*

Taking care of yourself and your diabetes can help you feel good today and in the future. At the moment you may or may not have any symptoms due to diabetes. Some people urinate more frequently or feel more tired and thirsty. Others have no symptoms at all. But we know that bringing your blood sugar into the normal range and keeping it there will help you stay healthy and prevent complications from starting.

Diabetes is **serious**, but you can learn to manage it. By doing so, you will reduce your chance of having health problems caused by diabetes such as:

- heart attack or stroke
- eye problems that can lead to trouble seeing or going blind
- pain, tingling, or numbness in your hands and feet, also called nerve damage
- kidney problems that can cause your kidneys to stop working
- teeth and gum problems

### *Know your diabetes ABCs:*

Talk to your health care team about how to manage your **A1C** (average blood glucose or sugar), **B**lood pressure, and **C**holesterol. This will help lower your chances of having a heart attack, a stroke, or other diabetes problems. Here's what the ABCs of diabetes stand for:

#### **A is for the A1C test.**

The A1C Test shows you what your blood glucose has been over the last three months. The A1C goal for many people is below 7, although your doctor may recommend a different goal. High blood glucose levels can harm your heart and blood vessels, kidneys, feet, and eyes.



### **B is for Blood pressure.**

The blood pressure goal for most people with diabetes is below 140/90. It may be different for you. Ask what your goal should be.

High blood pressure makes your heart work too hard. It can cause heart attack, stroke, and kidney disease.

### **C is for Cholesterol.**

LDL or “bad” cholesterol can build up and clog your blood vessels. It can cause a heart attack or a stroke. HDL or “good” cholesterol helps remove cholesterol from your blood vessels.

Cholesterol-lowering medications (statins) have been shown to reduce the risk of heart attacks and strokes and are often recommended for people with type 2 diabetes. Talk with your doctor about heart disease prevention.

## *Living with diabetes*

### *You are the one who manages your diabetes day to day.*

It is common to feel overwhelmed, sad, or angry when you are living with diabetes. You may know the steps you should take to stay healthy but have trouble sticking with your plan over time. This section has tips on how to cope with your diabetes, eat well, and be active.



### **Cope with your diabetes**

- Stress can raise your blood sugar. Learn ways to lower your stress. Try deep breathing, gardening, taking a walk, meditating, working on your hobby, or listening to your favorite music.
- Ask for help if you feel down. A mental health counselor, support group, member of the clergy, friend, or family member who will listen to your concerns may help you feel better.

### **Eat well**

- Make a diabetes meal plan with help from your health care team.
- Make healthy food choices such as fruits and vegetables, fish, lean meats, chicken or turkey without the skin, dry peas or beans, whole grains, and low-fat or skim milk and cheese.
- Keep fish and lean meat and poultry portion to about 3 ounces (or the size of a deck of cards). Bake, broil, or grill it.

- Choose whole grain cereals, breads, crackers, rice, or pasta. Whole grain foods have more fiber which is better for you. Choose brown rice instead of white rice and look for the word whole grain or whole wheat when choosing breads crackers or pasta
- When eating a meal, fill half of your plate with fruits and vegetables, one quarter with a lean protein, such as beans, or chicken or turkey without the skin, and one quarter with a whole grain, such as brown rice or whole wheat pasta.
- Drink water instead of juices, sweetened teas or coffees, sports drinks, or regular sodas.

### **Be active**

- Set a goal to be more active most days of the week. Start slow by taking 10 minute walks, 3 times a day. If you are already active, aim for 30-60 minutes a day.
- Twice a week, work to increase your muscle strength. Use stretch bands, do yoga, heavy gardening (digging and planting with tools), or try push-ups.
- Stay at or get to a healthy weight by using your meal plan and moving more.

### **Other things you can do to stay healthy**

- Take your medicines for diabetes and any other health problems even when you feel good.
- Tell your doctor if you cannot afford your medicines or if you have any side effects.
- Check your feet every day for cuts, blisters, red spots, and swelling. Call your health care team right away about any sores that do not go away.
- Brush your teeth and floss every day to keep your mouth, teeth, and gums healthy. Get regular dental care at least once a year.
- Have a dilated eye exam at least once a year.
- If you smoke, stop. Ask your doctor for help with a plan to quit.

### ***How to learn more about diabetes:***

- Take classes to learn more about living with diabetes. To find a class, check with your health care team, hospital, or area health clinic.
- Join a support group — in-person or online — to get peer support with managing your diabetes.
- Read about diabetes online. Go to **[www.ndep.nih.gov](http://www.ndep.nih.gov)** or **[www.diabetes.org](http://www.diabetes.org)**.

