

# Diabetes: What is it?

Having diabetes means that the sugar in your blood is too high.

Here is what should happen when you eat:

1. Food changes to sugar in your body. Sugar is your body's main energy source.
2. Sugar goes into the blood. Sugar moves through the blood to your body's cells.
3. Your blood sugar starts to go up.
4. Your body sends a message to the pancreas. The pancreas is the part of your body that makes insulin. It sits behind your stomach.
5. Your pancreas makes insulin and sends it into the blood.
6. Insulin travels to the cells. Insulin is the key that lets sugar into a cell.
7. Insulin opens the cell door to let sugar into the cell.
8. Sugar goes into the cell through the door.
9. Your body uses the sugar for energy inside the cell.

**For all this to work, you have to have insulin and cell doors that open.**

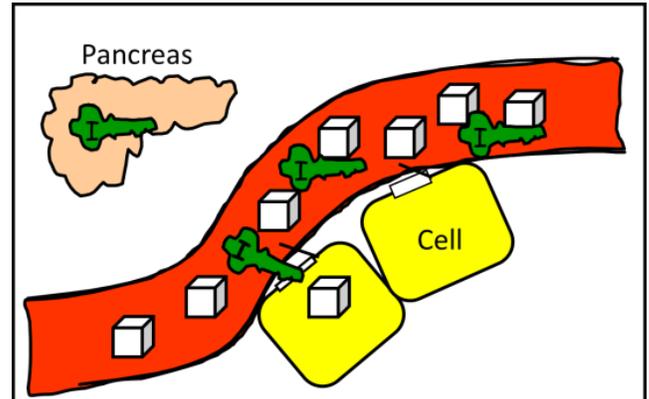


Figure 1: If you don't have diabetes, the pancreas makes insulin (keys) that goes into the blood stream to open cell doors and let sugar (cubes) into the cells for energy.

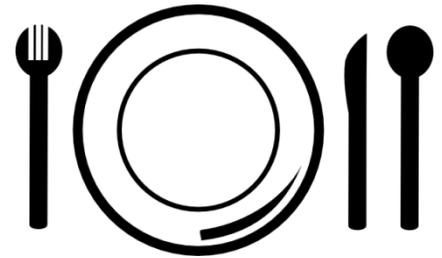
## Diagnosis of Diabetes\*

1. Fasting blood sugar above 125 mg/dl
  2. Any blood sugar above 200 mg/dl
  3. Hemoglobin A1c (HbA1c) above 6.5%
- \*Once with symptoms or on 2 different days without symptoms.

When you have diabetes,  
your body cannot turn the food you eat into energy in cells.

Common Symptoms of Diabetes:

- Thirsty
- Frequent urination
- Frequent hunger
- Weight loss



Some people do not have any symptoms when they are diagnosed with diabetes.

Some people are very sick with diabetic ketoacidosis (DKA) when they are diagnosed with diabetes. They may have abdominal pain, vomiting, rapid/deep breathing, or changes in mental status (sleepy, confused, etc.). This is a **MEDICAL EMERGENCY!**

## Type 1 Diabetes

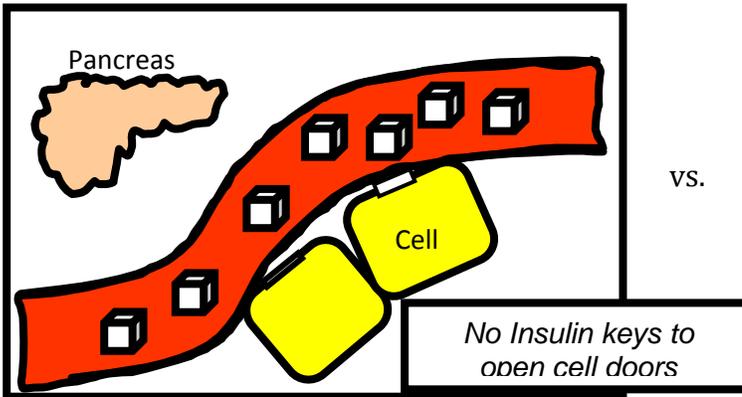


Figure 2: In type 1 diabetes, the body destroys the beta cells in the pancreas that make insulin. Blood sugar can't get into cells because there is no insulin. *This is an autoimmune disease.*

## Type 2 Diabetes

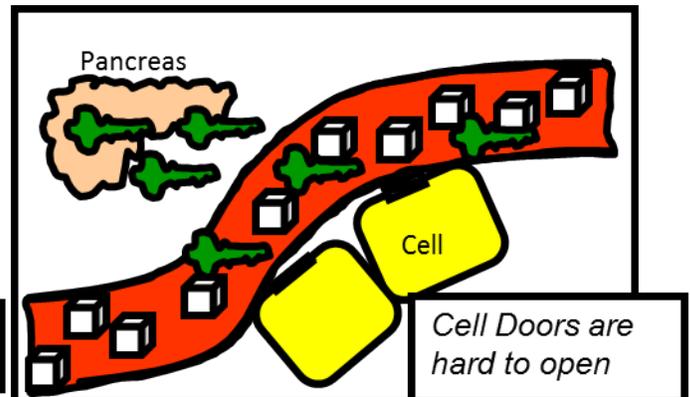


Figure 3: In type 2 diabetes, the pancreas is usually still making some insulin, but the cell doors are hard to open. The insulin doesn't work well. This is called *insulin resistance.*

## Treatment of Diabetes:

INSULIN: injectable medication (shots) used for both type 1 and type 2 diabetes

Very effective at lowering blood sugars

Can cause low blood sugars

## Types of Insulin

- Long acting (12-24 hour) insulin like Lantus (insulin glargine) or Levemir (insulin detemir) one or two times each day. These insulins give you a basal dose (lasts all day) with little or no peak.
- Rapid acting insulin like Humalog (insulin lispro), Novolog (insulin aspart) or Apidra (insulin glulisine) before each meal. These insulins start working within a few minutes of taking them, work hardest about 60-90 min later, and last up to 3-4 hours. They are good for bringing blood sugar down quickly and replacing the insulin that your body would normally make for the food you eat.
- There are also short acting and intermediate acting insulins, but they are not used as often.

If you need to take insulin, your diabetes team will help you learn which type and how much insulin to take.

OTHER DIABETES MEDICATIONS: includes both injectable and pill medications

Used in type 2 diabetes

Different medications have different effectiveness in lowering blood sugars

To learn more, see "Metformin and Other Medications for Type 2 Diabetes" handout

All patients with type 1 diabetes need injectable insulin. Some patients with type 2 diabetes can be treated with pills only.