

Blood glucose, insulin, and Type 1 diabetes

Oregon Diabetes Resource Bank
Handouts to help people with diabetes



Blood glucose is the fuel that provides energy for your body

When you eat, your body digests the food and turns some of it into “blood glucose.” Blood glucose is sometimes called “blood sugar.”

Your blood vessels carry blood glucose throughout your body and your cells use it for energy.

To be able to use blood glucose for energy, your body must have insulin

“Insulin” is a substance produced naturally inside the body by an organ called the “pancreas.” Insulin is needed to help move blood glucose from the blood into other parts of the body where it is used for energy.

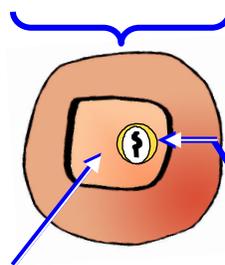
When you have Type 1 diabetes, your body does not make insulin

For people who do not have diabetes, the body makes as much insulin as it needs. But when you have Type 1 diabetes, your body does not make its own insulin. Since your body must have insulin, you have to inject it.

Insulin works with cells of your body like a key works with a lock

The pictures below explain why you need insulin and how it works in your body. The pictures show comparisons to a lock and key.

There are many trillions of cells in your body. Imagine that the drawing below is one of the cells in your body.

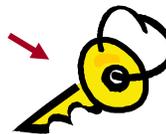


This “door” into the cell is closed and locked.

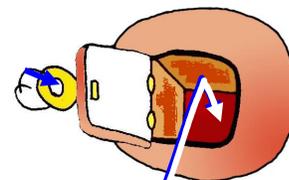
The right key in this “keyhole” will unlock the door.

To let blood glucose into the cell, the door to the cell has to be unlocked.

Insulin is the “key” that unlocks the door.



If the insulin “key” works in the lock, the door will open.



When insulin unlocks the cell, glucose can move from the blood into the cell to provide energy.

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When you have Type 1 diabetes:

 When you have Type 1 diabetes, your body does not make its own insulin.

With Type 1 diabetes, your body does not make any insulin “keys.” Without the insulin “keys” there is no way to unlock the cells of your body to let in the blood glucose.

Because blood glucose cannot move from your blood into your cells, the blood glucose stays in your blood. The blood glucose level in your blood can quickly get very high. This leads to severe problems in your body, putting your life in danger.

 When you have Type 1 diabetes, you must inject insulin into your body.

Your body must have insulin in order to live. If your body does not make its own insulin, you need to **inject insulin into it**. This gives your body the insulin “keys” it needs.

 When you have Type 1 diabetes, you can lead a long, healthy life.

- See your doctor and other health providers regularly.
- Check your level of blood glucose to be sure it’s at a healthy level.
- Eat healthy foods and stay active.

With no insulin, there are no keys for your locks



When you put insulin into your body, it gives you the keys you need for your locks

