

# Insulin

## Who needs Insulin?

- Everyone with type 1 diabetes
- Women with gestational diabetes (diabetes when they are pregnant) if diet alone does not control their blood sugar
- Anyone with type 2 diabetes who can not control their blood sugar with diet, exercise and oral medicine
- Sometimes when a person with diabetes has surgery



## What does insulin do?

- It helps change the food we eat into fuel (energy) for the cells
- It helps store glucose (sugar) in the liver
- It helps break down protein and helps the body store fat
- Insulin lowers your blood sugar even if you do not eat, so eat on a regular schedule when taking insulin

## Is there an insulin pill?

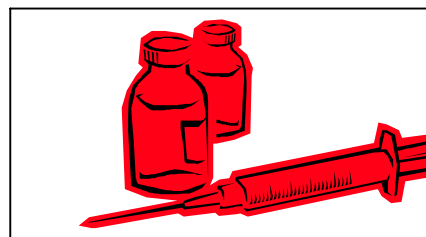
No. Insulin is a protein. If you took an insulin pill, your body would digest it like any food that is protein. It would not get to your blood to lower the blood sugar level.

## Where does insulin come from?

- Insulin is not a medicine. It is something the body makes. When the body does not make this protein, or not make enough, you have to take insulin by shot.

## TIPS

- Make sure you always have prescription refills.
- Always keep an extra bottle of each kind of Insulin you use in the refrigerator.



### • Storage

- Vials you are using do not need to be stored in the refrigerator.
- If the insulin is not kept in the refrigerator, mark it with the date you start to use it and throw it out in 30 days. (If you use the bottle of insulin after 30 days and see a change in your blood sugar, you need to get a new bottle.)
- Avoid extreme temperatures. **Do not store insulin** in the freezer or in hot places like the car or in a window.



### • Syringes

- Syringes can be pre-filled. This is helpful for anyone who has difficulty seeing or using his or her hands.
- Pre-filled syringes should be stored with the needle pointing down in the refrigerator for no more than 3 weeks. Before giving the insulin, roll the syringe in your hand.

## When and how often do you take insulin?



Write your medicine in "My Diabetic Record".  
Write your insulin taking behavior in your "Action Plan"  
Most people need to take at least two shots a day.  
Some people take 3 or 4 shots a day.  
Your provider will tell you how often to take insulin.

## Kinds of Insulin:



### Quick acting insulin is Lispro (Humalog):

It starts to act in less than 15 minutes; it lowers the blood sugar the most in 30 to 90 minutes and finishes working in three to four hours.

### Short acting insulin is Regular (R) insulin:

It starts to act in 30 minutes to two hours; it lowers the blood sugar the most in two to five hours and finishes working in five to eight hours.

### Intermediate acting, NPH (N) or Lente (L):

It starts to act in four to six hours; it lowers the blood sugar the most in eight to 14 hours and finishes in 16 to 20 hours.

### Long acting, Ultralente (U)

It starts to work in six to ten hours; it lowers the blood sugar the most in eight to 20 hours and finishes in 18 to 20 hours.

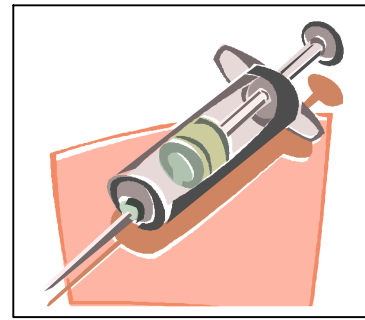
### NPH and Regular insulin mixture (70/30 and 75/25):

Two types of insulin are mixed in one bottle. It starts to work in 30 minutes; it lowers blood sugar the most in seven to 12 hours and finishes working in 16 to 24 hours.

How fast the insulin works depends on your own response, where on your body you give the shot and the amount of exercise you do.



Drawing up insulin: Always wash your hands.



### **Single Dose:**

- Draw air into the syringe, the same amount as the insulin dose
- Inject the air into the insulin vial (bottle)
- Invert the vial and pull back to the correct amount of insulin
- Check for air bubbles, tap syringe to get the bubbles up by the needle
- Push the plunger to put the bubbles in the vial
- Pull back on the plunger to the correct amount of insulin
- Remove the needle from the vial and give the insulin

### **Mixed Insulin (to give more than one kind at the same time):**

- Draw air into the syringe to the amount of long acting insulin and inject it into the long acting insulin vial
- Take the needle from the vial
- Draw air into the syringe to the amount of the shorter acting insulin and inject it into the short acting insulin vial
- Invert the short acting vial and pull back to the correct amount of insulin
- Check for bubbles if there are bubbles tap the syringe to bring them up to the needle and push the plunger to put the bubbles in the vial and make sure you have the correct amount of insulin in the syringe
- Remove the needle from the vial
- Rotate the longer acting insulin vial
- Insert the needle in the longer acting insulin and draw up the correct amount. Remember to add the two insulin amounts together.
- Remove the needle from the vial and give the insulin

## Always wash your hands first!

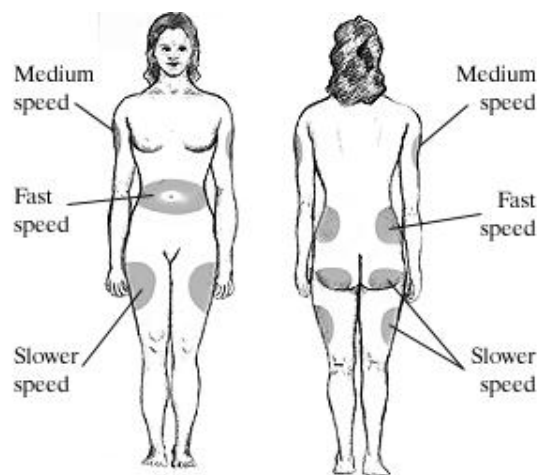
### To give a shot:

- Clean the skin with alcohol or soap and water
- Pinch up 1 to 2 inches of skin
- Insert the needle straight in
- Push the plunger down
- Release the skin and remove the needle

### Where can you give insulin?

There are several places on your body you can give your insulin shot. How fast your insulin works changes with the area where you give the shot.

Insulin shots given in the area near the stomach works the fastest. The area in the thigh is the slowest. The arms are about medium. Over time you will learn how your body responds to the insulin.



### Areas where insulin shots can be given

- If you have questions, talk to your provider
- Be sure to follow your diet and do not skip meals
- Take your insulin and eat at the same time each day

**Never reuse needles!**

## To dispose of the needle & syringe:

- Place them in a plastic or aluminum bottle or can
- You do not need to break the needle
- When the bottle or can is full, replace the lid and tape it shut
- Place in the trash



Here are some ideas for your Action Plan. Pick things you are willing to try. Good luck and share with your educator and provider!

- WHAT you are going to do
- HOW MUCH you will do
- WHEN you will do it
- HOW OFTEN you will do it

Medication	I will talk to my provider(when) at my next visit about my medication
Medicine refills	I will go to the <b>pharmacy</b> to get my <b>refills</b> before all my medicine is gone I will call for a <b>clinic appointment before I use my last refill</b>
Medication/Insulin taking	I will take my medication (when) in the morning with a meal starting (when). I will use a daily pill box to help remember my meds
Insulin taking	I will draw up my insulin for the week on Sunday and store it in the refrigerator I will ask a family/friend to draw up my insulin for the week