

# Insulin Facts and How Tos





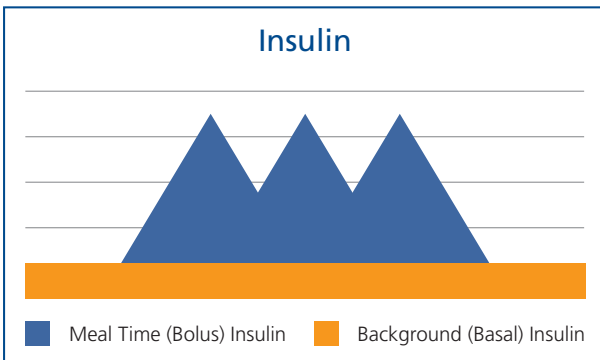
**Insulin** is a hormone that is made in the pancreas. Insulin moves glucose (sugar) from the blood stream into the cells of your body where it is used for energy. Taking insulin helps lower your blood sugar. This allows you to live a healthier life and avoid problems from high blood sugar.

## Types of Insulin

**Background Long-Acting Insulin (basal)** helps control glucose throughout the day and night. You take it at the same time each day. (Lantus, Basaglar, Semglee, Toujeo, Levemir, Tresiba, NPH)

**Meal Time Fast-Acting Insulin (bolus)** helps control glucose after eating meals. You take it right before or after you eat. (Humalog, Admelog, Novolog, Fiasp, Lyumjev, Apidra, Regular, Afrezza)

**Mixed Insulin** contains background and meal-time insulin and is taken before meals. (Novolog Mix 70/30, Humalog Mix 75/25 and 50/50, Humulin 70/30 and 50/50, Novolin 70/30, Ryzodeg Mix 70/30)



Common Name	Brand name	Starts working	Works hardest (Peak)	Lasts	
Lispro	Admelog Humalog Humalog U-200*	15 to 30 minutes	120 minutes	3 to 5 hours	
	Lyumjev	15 minutes			
Aspart	Fiasp	15 minutes	90 to 120 minutes		
	Novolog	20 to 30 minutes	120 minutes		
Glulisine	Apidra	15 to 30 minutes	90 to 120 minutes		
Regular	Humulin R Humulin Regular Novolin R	30 minutes	90 to 200 minutes	8 hours	
	U-500*		4 to 8 hours	13 to 24 hours	
NPH (N)	Humulin N Novolin N	1 to 3 hours	6 to 10 hours	12 to 16 hours	
Glargine	Basaglar Lantus Semglee Toujeo U-300*	1 hour	No peak	20 to 26 hours	
	Detemir			Levemir	12 to 20 hours
	Degludec			Tresiba Tresiba U-200*	Up to 42 hours
70% Aspart Protamine 30% Aspart	Novolog Mix 70/30	15 to 30 minutes	Two peak	10 to 16 hours	
75% Lispro Protamine 25% Lispro	Humalog Mix 75/25				
50% Lispro Protamine 50% Lispro	Humalog Mix 50/50				
70% Degludec 30% Aspart	Ryzodeg Mix 70/30			24 hours	
70% NPH 30% Regular	Humulin 70/30 Novolin 70/30	30 to 60 minutes		10 to 16 hours	
Insulin Human Inhalation Powder	Afrezza	12 minutes	35 to 55 minutes	90 to 270 minutes	

\*Concentrated insulin

# Insulin Injections

Insulin is injected into fatty tissue, where it is absorbed into the body. Move your injection sites at least 1 inch from your last injection. Do not inject into scar tissue or moles.

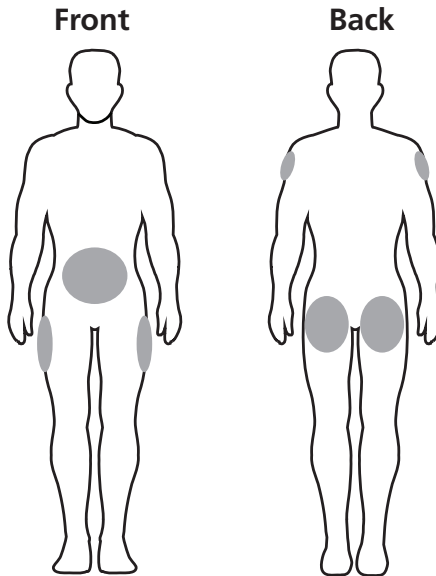
## Injection Sites

**Abdomen or stomach:** Inject at least 2 inches away from your belly button.

**Thigh:** Inject into the outer part of your thigh.

**Arms:** Inject into the fatty part on the back of your upper arm.

**Buttocks:** Inject into your fatty hip area.



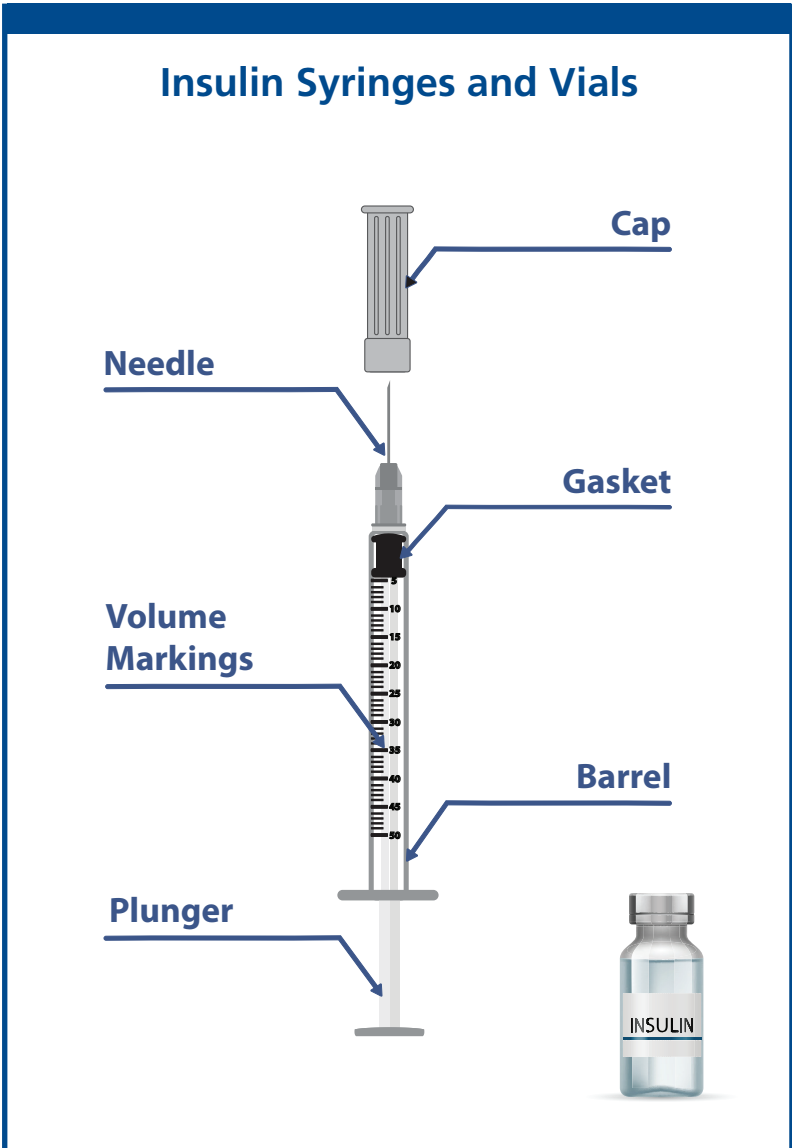
NOTE: Insulin action times vary with each individual. Times listed here are for general information only; please refer to prescribing information for specific details.

# Injecting Insulin with a Syringe and Vial

## **Wash hands and:**

1. Remove cap from insulin vial.
2. If the insulin is cloudy, gently roll the vial between your hands to mix thoroughly.
3. Remove the plunger and needle caps from the syringe.
4. Pull the syringe plunger to draw air into the syringe equal to your insulin dose. The top ring is equal to your dose.
5. Place the insulin vial on a hard surface and put the syringe needle into it. Push the plunger to force the air in the vial.
6. Keeping the syringe in the vial, pick up and turn the vial and syringe upside down.
7. Pull plunger to fill the syringe with prescribed amount of insulin. If bubbles appear in the syringe, flick the barrel with your finger or re-draw insulin to remove bubbles.
8. Remove needle from vial.
9. Choose injection site and pinch skin as needed.
10. Hold syringe in your preferred hand with your thumb on the plunger.
11. Holding the syringe at a straight angle, push the needle quickly into your skin.
12. Push the plunger until it's at "0."

13. Hold for 10 seconds.
14. Remove needle from the skin.
15. Dispose of the syringe in a red sharps container.



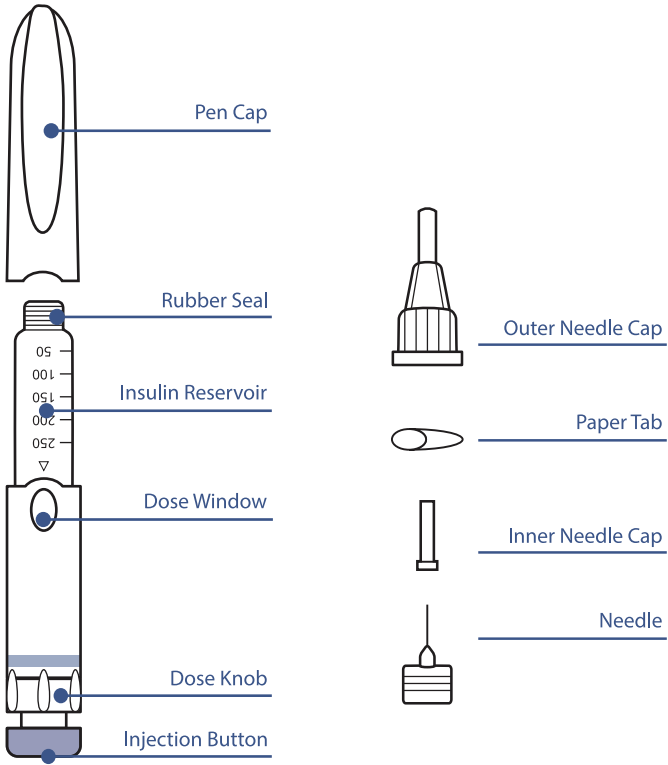
# Injecting Insulin with a Pen and Pen Needle

## **Wash hands and:**

1. Remove the paper tab from the pen needle and attach needle to insulin pen.
2. Prime the pen by dialing the dose window to "2."
3. Hold the pen with the pen needle facing upwards.
4. Push the dose button/knob and make sure you see a drop of insulin at the tip of the needle. If you do not see a drop, repeat steps 2 through 4.
5. Dial your prescribed amount of insulin.
6. Choose injection site.
7. Hold pen in your preferred hand with your thumb on the dose button/knob.
8. Holding the pen at a straight angle, push the needle quickly into your skin.
9. Push the dose button until it's at "0."
10. Hold for 10 seconds.
11. Remove needle from the skin.
12. Remove needle from the pen and dispose in a red sharps container.



# Insulin Pens and Pen Needles



## Low Blood Sugar

If your blood sugar is 70 or below, or if you have low blood sugar symptoms, follow the “Rule of 15” to bring your blood sugar up quickly.

### Signs and Symptoms of Low Blood Sugar

Shaky	Hungry
Sweaty	Weak or tired
Dizzy	Headache
Nervous or upset	Sudden behavior change

### Rule of 15

Check your blood sugar if you have signs or symptoms of low blood sugar. If you cannot check your blood sugar, go ahead and treat.

Treat by eating or drinking 15 grams of a fast sugar or carbohydrate.

Examples of this include:

- ½ cup (4 ounces) regular fruit juice
- ½ cup (4 ounces) regular soda pop
- 3 to 4 glucose tablets
- 5 to 6 sugar candies that you can chew quickly

Wait 15 minutes and check your blood sugar again. If it is still low, treat again as above. When your blood sugar returns to a healthy range, eat a meal or snack.

### Glucagon

If you are on insulin, ask your diabetes provider about a prescription for a glucagon kit.

Glucagon is a hormone that is used to treat a very low blood sugar when you may not be able to eat or drink a fast-acting sugar source.

You can learn about using glucagon from your diabetes provider or a certified diabetes educator, so you and your family or friends know how to correctly use it. If you or loved ones have a smart phone you can also get the Glucagon app for additional guidance.

## Storing Your Insulin

Unopened insulin pens and vials should be kept in the refrigerator. Do not freeze them.

Once in use, insulin vials and pens can remain at room temperature (at or below 86 degrees F) for 30 days.

Discard any remaining insulin after 30 days.

### Exceptions to this are:

Discard Humalog Mix 75/25 pen after 10 days

Discard Humulin NPH pen after 14 days

Discard Humulin Regular U-500 vial after 40 days

Discard Levemir vial and pen after 42 days

Discard Novolog Mix 70/30 pen after 14 days

Discard Toujeo pen after 42 days

Discard Tresiba pen after 56 days

### Sharps Disposal

Insulin syringes, pen needles and lancets are sharps. It is against the law to throw sharps away in your trash. Many retail pharmacies sell sharps containers approved for sharps disposal. Some pharmacies may charge you to dispose of the container when it is full. You may be able to safely mail your full sharps container through an approved program.

If there is a METRO facility in your area, you can sign up for their sharps program for a minimal fee. They will provide you with a new sharps container each time you return a full one to them.

Contact [SafeNeedleDisposal.org](http://SafeNeedleDisposal.org) for state and zip code specific disposal information.



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