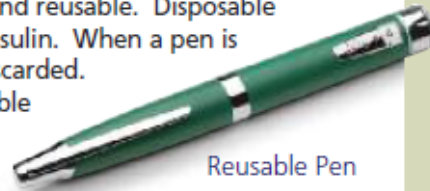


Insulin Pens – easy to carry, dose and use

An insulin pen is a convenient way to give yourself an insulin shot or injection. It looks like a large fountain pen and comes in two basic types: disposable and reusable. Disposable pens come already filled with insulin. When a pen is empty or expired, it is simply discarded. Reusable pens have a replaceable cartridge of insulin. The cartridge is replaced when the insulin is used or expired.



Reusable Pen

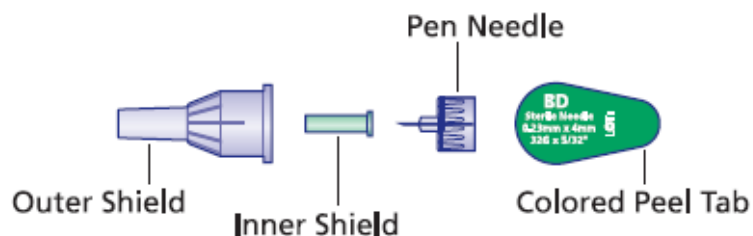
Whichever type of pen you use, you will need to attach a new pen needle onto the pen with each injection and remove it after every use. The pen may be kept in your pocket or purse at room temperature while in use. The insulin should not get warm or be exposed to direct sunlight. Store unused insulin pen cartridges and pre-filled pens in the refrigerator.



Disposable Pen

Note: Pens from different manufacturers operate differently. Check pen manufacturer's guidelines for operating instructions and insulin expiration details.

Parts of a Pen Needle



Each pen needle has an outer shield, an inner shield, and a colored peel tab.

How to attach the needle to a pen

1. Remove the colored peel tab from the outer shield.
2. Push the needle straight onto the pen and twist until it is tight.
3. Pull off the outer shield and set it aside. You will need it later to remove the needle from the pen.
4. Pull off the inner shield and prime your pen before injecting.

Always prime your insulin pen before each injection

Always refer to the instructions of the pen manufacturer when preparing your pen for use. Dial two units on your pen and then press the button to shoot some insulin into the air to make sure it works. This is called an "air shot" or "priming" the pen. If you do not see at least two drops of insulin after repeated priming, do not use the pen.

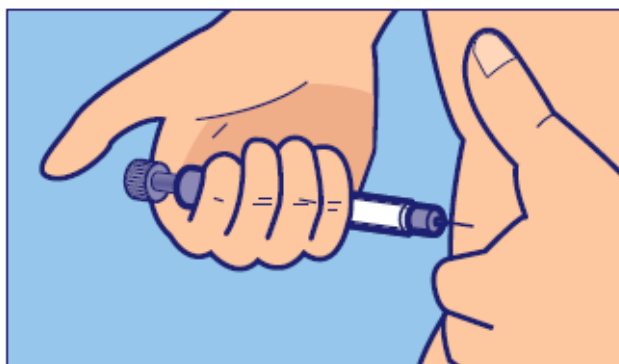


Sometimes, when you put a needle on a pen, a drop of insulin may leak out. This does not mean the pen has

been primed. You will still need to perform an "air shot" before you inject.

When you inject, hold the needle in your skin until you count to 5 or 10

Count slowly to five or ten before removing the needle from your skin. If the needle is taken out too fast, insulin



will leak out, affecting the dose that is delivered. Again, refer to the instructions of the pen manufacturer, as some pens are designed to inject at different rates.

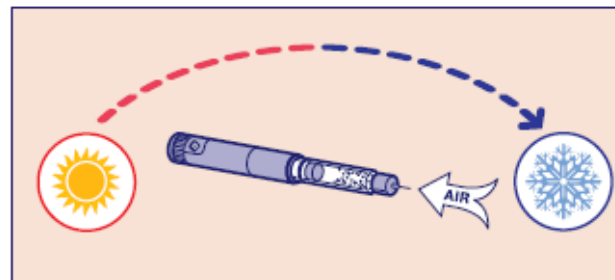
If insulin does drip from the needle after you take it out of your skin, don't worry as this may be normal. If bleeding occurs, press gently but do not rub to avoid bruising.

Never leave the pen needle attached between injections

A pen needle has openings on both ends that allow for a possible exchange of insulin and air. When you leave a needle attached to your pen, changes in the environment could severely impact your dosage.



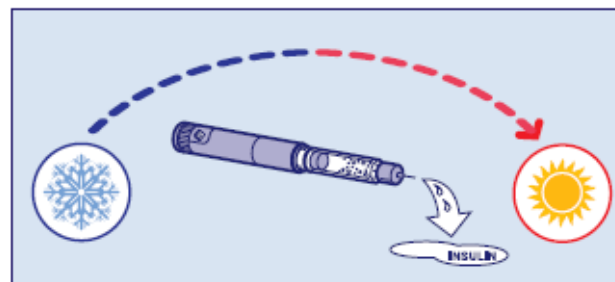
Warm to Cold Causes Compression



- Going from a warm place to a cold place causes insulin to compress or shrink.
- Air may fill the empty place in the cartridge.
- This may cause an under-dose of insulin. Up to 2/3 of the insulin may not be delivered.¹

¹ Ginsberg BH, Parkes JL, Sparacino C: The kinetics of insulin administration by insulin pens. *Horm Metab. Res.* 1994; 26:584-587.

Cold to Warm Causes Expansion



- Going from a cold place to a warm place causes the insulin to expand.
- As insulin expands it may leak out through the passage way that the needle creates.
- The fluid may leak out while the insulin particles stay in, changing the concentration of insulin.
- The strength of your insulin may change, which will affect the dose administered (may overdose).