

USING INSULIN PENS FOR INJECTIONS

WHAT IS AN INSULIN PEN?

An insulin pen is the most common way of giving an insulin injection, rather than using a syringe. It looks somewhat like a large fountain pen. It uses insulin cartridges (Penfills) instead of vials and disposable needles. In general, an insulin pen gives only one kind of insulin at a time. This means that if a child is receiving 2 kinds of insulin at a meal (e.g. NPH and rapid at breakfast), they will require 2 different pens and 2 injections at that meal. All insulin cartridges come in a 3.0-mL (300-unit) size. Pens vary in size, and they deliver insulin in either 0.5-unit or 1.0-unit increments. Pens are generally easier and more convenient than syringes for children to use at school or when going out. Pen needles come in various gauges (28- to 32-G) and lengths (4- to 6-mm), and they should be chosen based on comfort, providing that insulin doesn't leak out after injection. When switching from syringes to pens, it is important to keep a close eye on the injection sites and to monitor blood glucose levels a bit more frequently during the initial transition phase, to ensure that the pen is delivering the correct dosage. As the child gets older, the pen needle size may have to be changed to prevent insulin leakage or "blistering" under the skin.

PREPARING THE PEN:

1. Carefully load the cartridge/Penfill into the pen following the manufacturer's directions.
2. Ensure the pen is primed (black plunger/piston rod sits tight against the flat rubber stopper at the end of the cartridge/Penfill). You should feel resistance.
4. Screw on pen needle.
5. Always clearly identify the insulin to be injected before using.
6. If using NPH, roll the pen 10 times and invert the pen 180° 10 times to mix the insulin, following the [Mixing and Using Insulin Pen Cartridges](#) handout. The insulin should be uniformly mixed. If not, repeat the mixing procedure. Rapid-acting (Apidra®, Humalog® and NovoRapid®) and basal (Lantus® and Levemir®) insulins do not require this step.
7. Prime the pen needle by dialling up and discarding two (2) units of insulin.
8. Dial up the dose as directed by your doctor or nurse.

INJECTING THE DOSE:

1. Wash your hands.
2. To avoid tissue damage, choose a site for injection that is at least 1 centimeter ($\frac{1}{2}$ inch) from the previous injection site. Usual sites for injections are abdomen, hips, thighs, and arms.
3. With one hand, stabilize the skin by pinching up the area. Do not pinch up the skin if using the 4- or 5-mm needles, unless specifically instructed to do so by your Diabetes Educator.
4. Insert the needle as instructed by your doctor or nurse. Short needles are designed to be inserted at a 90-degree angle, perpendicular to the skin. Too small an angle may result in an insulin "blister" forming at the injection site. Changing the angle of the needle insertion should reduce the chance of bumps or bruises occurring.
5. To inject insulin, follow instructions of the pen manufacturer. You need to push down on the plunger to deliver the insulin dose. After the injection is complete, the dial should read zero (0).
6. Hold the pen and needle in place (and continue holding down on the plunger) **for ten (10) full seconds**; this will allow the insulin to disperse evenly under the skin so that it does not leak out.
7. Gently pull out the needle. **DO NOT RUB THE AREA.**
8. Immediately after an injection, remove the needle from the pen. This will guard against contamination, leakage, re-entry of air, and potential needle clogs. Do not reuse needles.
9. Dispose of your needles in a sharps container.

See also our handout [*Mixing and Using Insulin Pen Cartridges.*](#)