American Diabetes Association®

Understanding Your Insulin and Insulin Delivery Options

The different types of insulin available and the way it's delivered can be confusing. We're here to help with what to talk to your doctor about, what types of insulin are available, and the ways that insulin can be delivered.

Talking to Your Doctor



Your doctor will help you choose the type of insulin and delivery method that's best for your needs and will help you reach your targets. Talk to your doctor about:

- Cost and insurance coverage
- Needle anxiety or shyness around administering insulin
- Your lifestyle including if you are in sports or physically active
- Struggles with hypoglycemia (low blood glucose) or hyperglycemia (high blood glucose)

After you and your doctor understand your preferences, you'll discuss the options that will work best for you.

Types of Insulin

The different types of insulin are based on how quickly it starts working (**onset**), when insulin is at its maximum strength (**peak**) and how long the insulin stays active in your body (**duration**).

Rapid-Acting

Onset: about 15 minutes
Peak: about 1–2 hours
Duration: about 2–4 hours

Rapid-Acting Inhaled

Onset: about 10–15 minutes
Peak: about 30 minutes
Duration: about 1.5–3 hours

Short-Acting

Onset: about 30–60 minutes
Peak: about 2–3 hours
Duration: about 3–6 hours

Intermediate-Acting

Onset: about 2–4 hours
Peak: about 4–12 hours
Duration: about 12–18 hours

Long-Acting

Onset: about 1.5–4 hours
Peak: No peak
Duration: about 24 hours

Ultra Long-Acting

Onset: about 6 hours
Peak: No peak
Duration: about 36+ hours

Insulin Delivery Methods

Liquid insulin can be injected or delivered into the fatty tissue under the skin of your abdomen, thigh, or arm using a syringe, insulin pen, or pump. Inhaled insulin is a powder form that's inhaled through your mouth using an inhaler.

Syringe

To deliver insulin with a syringe, you need to draw insulin from a vial into the syringe using the markings on the vial to measure the right dose.

- Usually the most affordable option
- Allows for mixing different insulin
- You may need to calculate your dose
- It can be hard to hold the syringe and vial, draw insulin, or inject your dose
- You may have trouble reading units on the syringe
- Your syringes and vials can be harder to bring with you since they take up more space

Insulin Pens

Insulin pens look like a large pen and come pre-filled or with replaceable insulin cartridges. You set your dose using a dial.

- Insulin pens are small and easy to take with you
- They look like regular pens
- Your doses set using a dial, so it's easier and more accurate
- Can be more expensive than using a syringe and vial
- Only comes with commonly mixed insulins and ratios

Inhaled Insulin

Inhaled insulin is a rapid-acting powder that you breathe into your lungs using a small inhaler. The insulin comes in cartridges that are used with the inhaler and the dose you inhale is based on the units that each cartridge holds (cartridges can be combined).

- You don't need a needle to deliver the insulin—providing a pain-free delivery
- Reduced anxiety over needles
- If you can't inject insulin due to vision loss, trouble using your hands, or a mental disability
- You may still need a long-acting insulin
- You can't use inhaled insulin if you have certain lung conditions, like asthma or COPD

Insulin Pumps

Insulin pumps are small devices worn or attached to your body. They deliver a steady stream of rapid-acting insulin through a tiny tube (cannula) placed under the skin. You also add bolus insulin when needed and can adjust the basil insulin delivered.

- You don't need to use syringes or insulin pens as often
- The dosing is very precise
- Insulin pumps need to be worn 24/7
- You can develop skin infections at the infusion site
- Your insurance plan may not cover them

Automated Insulin Delivery (AID) Systems

AID systems combine an insulin pump with a continuous glucose monitor (CGM). The system automatically adjusts the insulin delivered based on your blood glucose (blood sugar) levels.

- Reduces insulin delivered automatically to prevent low blood glucose (hypoglycemia)
- Increases insulin delivered automatically to correct high blood glucose (hyperglycemia)
- You still need to make manual changes for meals and physical activity
- You need to wear two devices at all times