American Diabetes Association®

Getting to Know Your Insulin and Insulin Delivery Choices

The many types of insulin and ways to take it can sometimes feel confusing. We can help you explore what to discuss with your doctor, which insulins are available, and the different ways you can take them.

Talk With Your Doctor



Your doctor will help select the insulin and delivery method suited to your needs and support you in reaching your targets. Discuss these topics with your doctor:

- Insurance coverage and costs
- Fear of needles or discomfort with giving yourself insulin
- Your daily routine, including sports and other physical activity
- Problems with hypoglycemia (low blood glucose) or hyperglycemia (high blood glucose)

Once you and your doctor know your preferences, you can talk through the choices that suit your needs.

Insulin Options

Insulin types differ in how soon they begin working (**onset**), when they reach their strongest effect (**peak**), and how long they remain active in your body (**duration**).

Rapid-Acting

Onset: around 15 minutes
Peak: around 1-2 hours
Duration: around 2-4 hours

Inhaled Rapid-Acting

Onset: around 10-15 minutes
Peak: around 30 minutes
Duration: around 1.5-3 hours

Short-Acting

Onset: around 30-60 minutes
Peak: around 2-3 hours
Duration: around 3-6 hours

Intermediate-Acting

Onset: around 2-4 hours
Peak: around 4-12 hours
Duration: around 12-18 hours

Long-Acting

Onset: around 1.5-4 hours
Peak: No peak
Duration: around 24 hours

Ultra Long-Acting

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

Ways to Take Insulin

A syringe, insulin pen, or pump delivers liquid insulin into the fatty tissue beneath the skin of your abdomen, thigh, or arm. Inhaled insulin comes as a powder that you breathe in through your mouth with an inhaler.

Syringe

To inject insulin with a syringe, draw it from a vial into the syringe. Use the markings on the vial to measure the correct dose.

- Often the lowest-cost choice
- Lets you mix different insulins
- You may have to calculate a dose
- It may be difficult to hold the syringe and vial, draw insulin, or inject.
- The syringe markings may be difficult to read
- Syringes and vials can be less convenient to carry because they require more room

Insulin Pens

Insulin pens resemble a large pen. They are prefilled or use replaceable insulin cartridges. Use a dial to set the dose.

- Insulin pens are compact and convenient to carry
- They resemble ordinary pens
- A dial makes setting doses simpler and more accurate
- May cost more than a syringe and vial
- Available only in common insulin mixtures and ratios

Inhaled Insulin

Inhaled insulin is a fast-acting powder breathed into the lungs through a small inhaler. Cartridges containing the insulin fit into the inhaler. Your inhaled dose depends on the number of units in each cartridge. Cartridges can be used together.

- No needle is needed to give the insulin, allowing delivery without pain
- Helps lessen fear of needles
- Useful if vision loss, hand difficulties, or mental disability prevent injections
- Long-acting insulin may still be necessary
- Inhaled insulin cannot be used with certain lung problems like asthma or COPD

Insulin Pumps

Insulin pumps are small devices worn on or attached to the body. They supply a steady flow of rapid-acting insulin through a tiny tube (cannula) under the skin. You can give bolus insulin as needed and adjust basal insulin delivery.

- Reduces how often you use syringes or insulin pens
- Highly precise dosing
- Insulin pumps must be worn 24/7
- Skin infections may occur at the infusion site
- Insurance coverage may not be available

Automated Insulin Delivery (AID) Systems

AID systems pair an insulin pump with a continuous glucose monitor (CGM). Insulin delivery adjusts automatically in response to your blood glucose (blood sugar) levels.

- Automatically reduces insulin delivery to prevent low blood glucose (hypoglycemia)
- Automatically increases insulin delivery to correct high blood glucose (hyperglycemia)
- Manual adjustments are still needed for meals and physical activity
- Requires wearing two devices at all times