

Living Well with Diabetes

Insulin pump therapy

What is an insulin pump?

An insulin pump is a small medical device, about the size of a deck of cards. It gives you fast-acting insulin, such as Humalog or Novolog, throughout the day and night, and can help to keep blood sugar (also known as blood glucose) as close to normal as possible.

An insulin pump is worn outside the body, usually clipped to a belt or clothing. It delivers insulin to your body through a thin plastic tube called a cannula, placed just under your skin. You will change the cannula and re-fill your pump with insulin every 2 to 3 days.

How does an insulin pump work?

The insulin pump doesn't work on its own. You need to program it to give you the right amount of insulin throughout the day.

Insulin is delivered in two ways:

- Basal insulin, which is delivered to your body in a slow drip to keep your blood sugar steady while you are sleeping and between meals.
- Bolus insulin, which you program your pump to deliver before your meals. Bolus doses give you the extra insulin you need to make sure your blood sugar doesn't get too high.

To use an insulin pump, you'll need to know or learn:

- How to count the carbohydrates in your food
- How much insulin you need to give when your blood sugar is high
- How much insulin you need to give for the carbohydrates you eat
- How to adjust your insulin for physical activity to help prevent hypoglycemia (low blood sugar).

Why should I consider an insulin pump?

Many people like having an insulin pump because:

- It keeps the body supplied with the insulin it needs throughout the day and night without having to give shots.
- It makes it easier to take insulin at mealtimes and for high blood sugars
- They may have fewer problems with very low blood sugar.

Can a pump help to stop me from having low blood sugars?

Low blood sugar can still happen with an insulin pump, but insulin can be adjusted so it happens less often. People who have low blood sugar a lot can't always tell when their blood sugar levels start to drop. Once they get used to keeping their blood sugar in a normal range, it's easier for them to feel when their levels are starting to get too low.

What are some other benefits of using a pump?

Some other benefits of an insulin pump include:

- **Fewer problems with high blood sugar in the morning.** People who have high blood sugar levels in the morning can program the pump to give them less insulin late at night, and more in the early morning, when they need it.
- **Fewer problems with blood sugar levels bouncing from very high to very low.** With a pump, people can schedule exact doses of insulin when they need it. This can be helpful for people who work different shifts or have changing work schedules. It's also helpful for athletes, who might want to schedule lower doses of insulin when they are training hard.
- **Greater lifestyle flexibility.** With daily insulin shots, people often have to schedule activities and meals around insulin peaks. With a pump, there are no insulin peaks. . This can help you be more flexible with mealtimes, physical activity, sleeping, and other activities.

Are there any disadvantages to using a pump?

- There is more of a risk for diabetic ketoacidosis (DKA) if the pump catheter comes out and you don't get insulin for several hours. DKA is dangerous condition that may require hospitalization.
- Some people gain weight when they start an insulin pump if they eat more food than they have been when taking shots (because it's easier to give insulin for food).
- Pumps can be expensive, usually about \$7000-9000 dollars for the pump, and \$200 per month for supplies. Coverage depends on your health plan.
- Some people do not like being attached to a mechanical device and tubing all the time. The pump may only be removed briefly (up to an hour) for bathing, exercise, or intimate contact.
- The process of training and getting used to the pump can take time and effort over several months, with more visits and contact with the diabetes team

How do I know if a pump is right for me?

An insulin pump isn't right for everyone. To be considered for an insulin pump, you must:

- Have had type 1 diabetes for over 6 months, or have type 2 diabetes and be taking both a long and a short-acting insulin (such as Lantus and Humalog)
- Currently take at least 3 or more insulin shots a day.
- Have checked your blood sugar at least 4 times a day, every day, for the past 2 months or longer.
- Be able to understand your blood sugar patterns and solve problems with your blood sugars
- Be able to count carbohydrates
- Have had lots of highs and lows and/or low blood sugars while taking shots
- Not have any conditions that could cause problems in using a pump.

For children under the age of 13, the following must also be met:

- Both the child and parent(s) must want to learn how to use a pump.
- The family must participate in an assessment to make sure that both the child and parent(s) are ready to use an insulin pump.
- Parent(s) must agree to be available 24 hours a day to help the child with any pump management concerns.

How do I get started?

Tell your health care provider you'd like to know more about using an insulin pump. Ask him or her to make an appointment for you with the Diabetes Team. When you meet with the Diabetes Team, you will talk about your diabetes knowledge and skills, and the steps you currently take to manage your diabetes. The team will see if you're ready to start the insulin pump.

If you're approved for an insulin pump:

- You'll have an individual insulin pump training appointment to learn how to use the pump and get monthly supplies. You will have close follow up contact with the Diabetes Team after you start your pump.
- You may try using an insulin pump with salt water (not insulin) for 3 to 4 days before you get started using insulin in your pump.

How do I know if my health plan covers the pump?

Call Member Services at 1-888-901-4636 and ask about your benefits and co-pays for Durable Medical Equipment and supplies.