

People who might want to consider using an insulin pump:

1. If you often have high or low blood glucose.
2. If you are on multiple daily injections.
3. If you want to improve blood glucose (sugar) levels.
4. If you want less frequent or severe hypoglycemia (low blood glucose).
5. If you want to lower the risk of long-term diabetes complications.
6. If you want a more flexible lifestyle.



Q: What responsibilities come with an insulin pump?

- A:** Check your blood glucose levels frequently (at least four times a day, always before each meal).
- Learn to count carbohydrates and adjust your insulin doses to match food intake.
 - Use a correction or sensitivity calculation to make immediate adjustments.
 - Respond quickly when your blood glucose levels show hyperglycemia and/or if there are ketones in your urine.
 - Regularly monitor your pump and the insertion site for any problems.



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An insulin pump is an external pump that delivers insulin continuously from a refillable storage reservoir by means of a cannula placed under the skin. The pump can be programmed to deliver a basal rate of insulin throughout the day, with higher infusion rates triggered by the push of a button at meal times.

Q: How do insulin pumps work?

A: Insulin pumps deliver rapid or fast-acting insulin 24 hours a day through a cannula placed under the skin. Your insulin doses are separated into:

- Basal rates
- Bolus doses to cover lack of carbohydrates in meals
- Correction or supplemental doses

Basal insulin is delivered continuously over 24 hours and keeps your blood glucose levels in range between meals and overnight. Often, you program different amounts of insulin at different times of the day and night.

When you eat, you use buttons on the insulin pump to give additional insulin called a bolus. You take a bolus to cover the carbohydrates in each meal or snack. You also take a bolus to treat high blood glucose levels.

If you have high blood glucose levels before you eat, you give a correction or supplemental bolus of insulin to bring it back to your target range.

Benefits

- Increasing patient choice, and improving partnership working, patient experience and engagement.
- Improving quality of life for people with type 1 diabetes.
- Enhancing ability to self-care.
- Reducing the frequency and severity of hypoglycemic episodes.
- Increasing the proportion of patients who achieve good glucose control and achieving a target HbA1c.
- Reducing risk of long-term diabetes complications by achieving good control of blood glucose.
- Improving performance and patient-centered clinical care.

Here are some advantages of insulin pump therapy:

- Tighter glycemic control, which decreases the risks of long-term complications.
- Variable basal rates can be used to accommodate fluctuations in insulin requirements during the night, caused by hormonal releases.



- Reducing basal rates during low physiologic requirements may lessen the frequency.
- Improved convenience, flexibility, satisfaction and lifestyle.
- Meals and snacks can be customized.
- Insulin needs can be tailored to accommodate changes in schedules.
- More precise dosing because basal and bolus doses can be delivered in 0.25 units.

Here are some disadvantages of insulin pump therapy:

- Frequent self-blood glucose testing is required.
- Skin irritations and infections can occur if the patient fails to use proper insertion and skin care techniques.
- Possible technical and mechanical failures.
- Diabetes ketoacidosis can occur very quickly in patients with type 1 diabetes.
- The insulin pump and supplies are costly.