

INTRODUCTION TO INSULIN PUMPS

What is an insulin pump and how does it work?

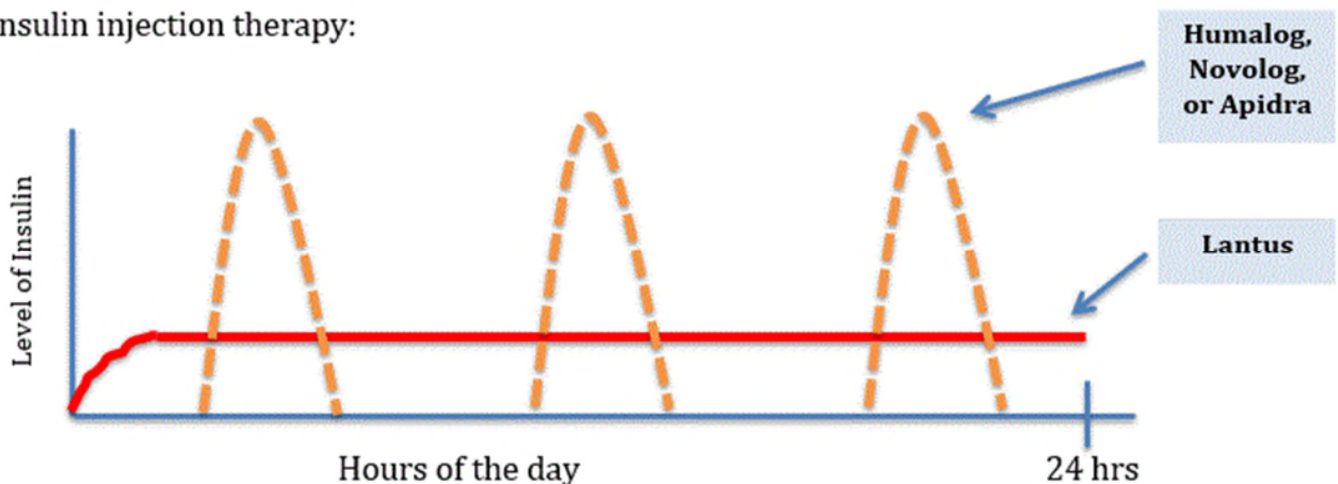
An insulin pump is a small device that delivers insulin 24 hours a day. Insulin pumps are connected to the body via an infusion set that is inserted underneath the skin. Insulin, which is stored in the pump, goes through tubing to the infusion set. There is one pump brand that does not use tubing but instead has a disposable pod that holds insulin and has an incorporated infusion set.

For all pumps, the location where the infusion set is attached to the skin is called the infusion site. Every 2-3 days the infusion site is changed to a different location on the abdomen, buttocks, upper arm, or thighs (similar to insulin injection sites). For active children, adhesives can be used to keep infusion sets from falling between site changes.

Whats the difference between insulin injections and pump therapy?

Let's first review the two types of insulin given via injections. Long acting insulin (such as Lantus or Levemir) is given once or twice a day and provides long acting insulin coverage. Rapid acting insulin (such as Humalog, Novolog, or Apidra) is given before eating carbohydrates and to bring down a high blood glucose:

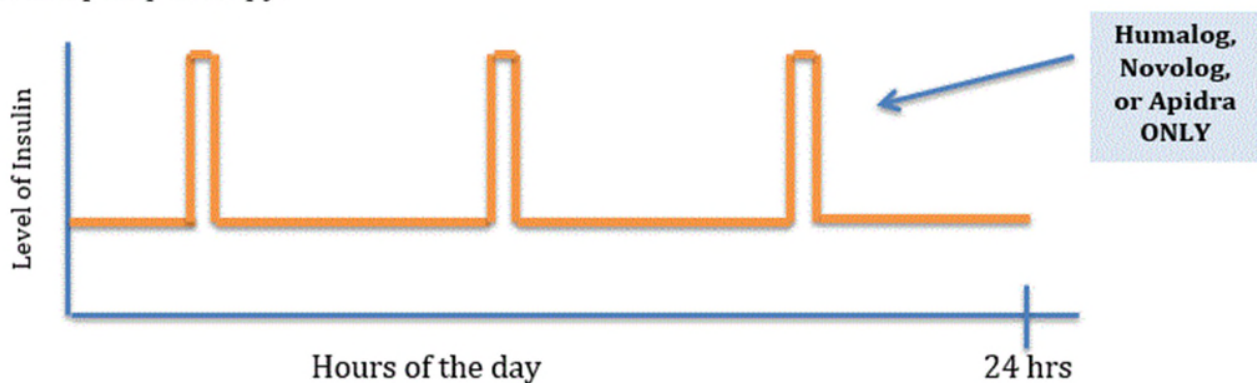
Insulin injection therapy:



The difference with an insulin pump is that it gives a small amount of rapid acting insulin (such as Humalog, Novolog, or Apidra) 24 hours a day instead of long acting insulin (such as Lantus or Levemir). This is called “basal” insulin. The advantage of an insulin pump is that the basal rate can be programmed to change throughout the day and night to help keep blood glucose in target range.

Before eating carbohydrates and to bring down a high blood glucose, a bolus of rapid acting insulin is given through the pump. This is called “bolus” insulin. This is not automated and requires you and/or your child to count carbohydrates, check blood glucose, and to enter these numbers into the pump. However, an insulin pump is able to deliver a more precise insulin bolus than is possible with an insulin pen or syringe - this is particularly helpful if your child takes small insulin doses.

Insulin pump therapy:



Why should I consider an insulin pump for my child?

Studies have shown that using an insulin pump has been related to better diabetes outcomes and blood glucose control. However, it is important to remember that an insulin pump does not decrease the amount of work and responsibility for your child’s diabetes care – it will simply give you and your child a more effective tool for his/her diabetes management. It is essential to have an interactive discussion with your child to see if he/she is interested in an insulin pump.



Things to consider:

- Often blood glucose control is not immediately improved after starting an insulin pump as pump setting often need to be adjusted.
- While an insulin pump means that your child will not have multiple daily insulin injections, your child will still have to have multiple daily blood glucose checks throughout the day.
- While insulin pump allows for more flexibility with eating, it is still important to maintain your child's diabetes routine for meals and snacks, and continue a healthy eating pattern.
- Some insulin pumps are programmed to work with continuous glucose monitors.
- If the pump breaks or malfunctions, you sometimes have to act quickly to prevent DKA by fixing the pump issue (with the help of your pump company or our providers), or by switching to injections temporarily. Every pump company will assign a trainer who will teach you/your family regarding what to do with common pump related issues and have a 24 hour calling service. In addition, our diabetes team is available as well to help.

Is insulin pump therapy expensive?

Insulin pump (and related supplies) coverage and costs vary by insurance policy. Your insurance and personal preference will determine which insulin pump your child receives. You will have an opportunity to meet with a diabetes educator to learn about the different brands of pumps. It is important to note once an insulin pump is chosen, some insurance policies may not allow changing to another type of insulin pump for 4-5 years.

If you think your child/your family is ready to discuss switching to the insulin pump, please schedule a visit with your diabetes health care provider and diabetes educator at Texas Children's and we can discuss the diabetes checklist on the following page together!