

Pediatric Endocrinology Associates

Insulin Pump Therapy: Key Treatment Concepts

1) “Basal” and “bolus” terminology”

- a. *Basal* insulin is insulin that the pump gives *automatically*, in hourly increments. Basal insulin replaces the Lantus or Levemir dose that was being given daily (or twice daily).
- b. *Bolus* insulin is insulin that is given to cover carbs or to correct for high blood sugar. It is just like giving mealtime or correction shots. Boluses are what you tell the pump to do.

2) Lantus or Levemir will not be used with the pump:

As the pump uses only rapid-acting insulin (such as Humalog, Novolog, or Apidra), there is no need for Lantus or Levemir. The basal rates replace this type of insulin.

3) Management of persistent hyperglycemia, hyperglycemia with ketones (“sick days”):

- a. If high blood sugars are present and they do not come down with correction, or if large ketones are present, *the first thing you should think is that the pump site malfunctioned.*
- b. *Change out the site* (even if it was just changed within the past 24 hours) and make sure *new insulin* is in the pump. Also, check that the insulin has not been open over 30 days.
- c. *Give correction doses manually (by injection).*
- d. If the pump is malfunctioning, call the company for a replacement pump and revert to injections, *including Lantus or Levemir* (see below for dosing instructions).
- e. Following these steps will usually keep you from having to go in to the ER.

4) Bolus for all ingested carbs:

Even if you have been accustomed to giving insulin only when eating more than a certain number of carbs, this no longer applies with the pump. The pump can accurately give small fractions of a unit of insulin. *So be precise with carb counting and cover everything with insulin.* You will find that blood sugar control improves significantly because of this. This is one of the main advantages of using an insulin pump!

5) Back-up supplies – especially Lantus or Levemir:

Keep a back-up vial or pen of long-acting insulin, as well as a small supply of syringes or pen needles, in case the pump breaks or malfunctions. Also, please keep a written computerized record of all pump settings (including the total amount of insulin delivered by basal each day, carb ratios, and correction factors / sensitivity / ISF), and keep this updated. This will allow you to revert to injections until a replacement pump is received. *The Lantus / Levemir dose is the same as the total daily basal insulin dose, and can be given once daily until the new pump arrives.*

