



Getting Started on Your Insulin Pump

Starting Basal Rates

Midnight _____
 3 a.m. _____
 7 a.m. _____
 11 a.m. _____
 7 p.m. _____

Starting Bolus Dosages

Carbohydrate ratio:

B: _____ units per _____ grams of carb
 L: _____ units per _____ grams of carb
 D: _____ units per _____ grams of carb

Correction (Sensitivity) ratio:

Daytime:

1 unit of insulin for every _____ points over blood sugar of 120 (you may change your target to 100 after your pump is set).

Nighttime:

1 unit of insulin for every _____ points over blood sugar of 120 (or 150 for toddlers/preschoolers).

Blood Glucose Target Levels:

Before meals	80-150 mg/dl
2 hours after meals	less than 200 mg/dl
Bedtime & nighttime	100-150 mg/dl

To best determine if these rates are right for your body, follow these rules for the first 2 to 3 weeks (or until all fasts and ratios have been determined):

- Follow a stable food pattern. Avoid foods that are difficult to count carbohydrates until pump settings are determined. Avoid foods that are high in fat because the fat will slow down the absorption of the carbohydrates.
- Have 3 meals at set times, with no carbs between meals except to treat a low.
- If possible, do not give a bedtime snack for the first few days after starting on the pump. If you have a snack the first night, only give 50% of the usual meal bolus and then evaluate.
- Correct blood sugars only at meal times unless they are over 300 or ketones are present.
- Limit exercise for the first several days of pump use.

Monitor and record (or download to computer):

- Blood sugars
- Carbs eaten
- Meal boluses
- Correction boluses
- Basal rates
- Ketones if tested
- When a set change has been done

At these times:

- Before meals
- 2 hours after meals
- At bedtime
- At midnight
- At 3 a.m.

Setting the basal rates:

Once you have been on the pump for several days, you will be asked to fast (not eat) during part of the day to evaluate the basal rate. **Follow these rules when fasting:**

- Do not eat during fasting period (except for minimal free foods – too many can raise your blood sugar).
- Check blood sugar every 2 to 3 hours and record in logbook.
- Treat a low blood sugar (below 80) and **stop the fast**.
- Do not correct a high blood sugar during a fast unless it is greater than 300; if you have to correct, **stop the fast**.
- Do not do any prolonged exercise on the day of the fast. Normal activities are okay.

See the accompanying worksheets for the time frames of the fasts and when to check blood sugars and the eating schedule.

Hypoglycemia (Low Blood Sugar)

If blood sugar is below 80, take 10 to 15 grams of carbohydrate (4 oz. juice or soda, 3 glucose tablets, 5 Lifesavers, etc.), then retest in 15 minutes. If still low, repeat.

You do not need to eat a follow-up snack; except if you gave a bolus in the last 2 to 3 hours, you may need a snack.

Unexplained high blood sugars:

Your pump uses rapid acting insulin **only**. If insulin delivery is interrupted, ketosis can develop **very** quickly. **Possible causes** could be:

- Empty cartridge
- Kink in cannula or tubing
- Insulin that has lost its potency or is expired
- Infusion set inserted into scar tissue
- Infusion set disconnected from pump
- Insulin is not absorbing for unknown reason

Treatment for unexplained blood sugar greater than 300:

- Check tubing for leaks, air bubbles, kinks and that the set is inserted properly
- Test for ketones immediately
- Give correction bolus as directed on the pump or additional insulin if moderate/large ketones per guidelines below:
- If ketones moderate give 1.5x correction bolus
- If ketones are large give 2x correction bolus
- Retest blood sugar in one hour

If blood sugar is not lower in 1 hour, give another correction by injection with a syringe or insulin pen, and change the infusion set. Continue to check for ketones every 2 hours until negative. If you continue to have moderate to large ketones after giving extra insulin, page the diabetes nurse or doctor on call at 206-987-2000 or 866-987-2000.

*****Use the same guidelines for extra correction insulin if you have ketones due to illness – corrections may be given every 2 hours on an insulin pump.*****

Prevention of high blood sugars:

- Monitor blood sugar 4 times a day or more
- Change your cartridge and infusion set every 2 to 3 days preferably during the day or at least before dinner, not at night before you go to bed
- Use good rotation for your infusion sites to get the best absorption and prevent scar tissue
- Give all boluses
- Evaluate basal rates and meal/correction boluses on an ongoing basis
- Do not disconnect pump for more than 1 to 2 hours

What to do in case of pump failure:

Always keep a bottle of Lantus (Glargine) or Levemir in your refrigerator in case of pump failure. Give an injection of Lantus or Levemir as soon as your pump fails. Use your 24-hour basal total as the amount to be injected. If you do not know this total, add up all of your basal rates. When you are ready to start on the pump again, reconnect 22 hours after you gave the Lantus or Levemir.

Call the customer service number on the back of your pump for help in troubleshooting the problem or obtaining a replacement pump.

You can also use these guidelines if you are going to disconnect for 24 hours because of visiting a water park like Wild Waves or something similar.

What to carry with you at all times:

- An infusion set with tubing and a reservoir
- A battery
- A bottle of insulin and syringe or insulin pen

Reporting Blood Sugar Results:

We will review the blood sugar readings every 2 to 3 days for the first 2 to 3 weeks. The nurse who teaches your pump class will let you know what days to send in your blood sugar numbers. Please call, e-mail or fax your numbers before 11 a.m. on those days so we have time to review and make changes to your pump settings.

Direct line: 206-987-5452 Toll-free 1-866-987-2000 (ask for ext. 5452)

Fax number: 206-987-2720 E-mail: endonurse@seattlechildrens.org

For urgent matters (positive ketones or vomiting) page the diabetes nurse or doctor on call 206-987-2000 or 1-866-987-2000.

Follow Up:

Resume your usual clinic visits with the endocrinologist or mid-level practitioner.

Insulin pump supplies are ordered from the insulin pump company.

You are encouraged to attend the advanced pump class in the next few months. It is held on the second Monday of each month from 6 to 7:30 p.m. It teaches other features on your pump that will help you optimize the use of your pump. Pizza is served during class. Call the scheduling center to sign up for the class (206-987-2640, option 1).

Free Interpreter Services

- In the hospital, ask your child's nurse.
- From outside the hospital, call the toll-free Family Interpreting Line 1-866-583-1527. Tell the interpreter the name or extension you need.