

Switching from NPH to Basal-Bolus Insulin

Tips for starting long-acting (basal) and rapid-acting (bolus) insulin

(Circle)	Starting dose of:	To be given:
	Lantus	Morning Bedtime
	Levemir	Morning Bedtime

Your target blood sugar



Check blood sugars:

- Before breakfast
- Before lunch
- Before dinner
- Bedtime
- Between 1 and 3 a.m. for the first several nights after starting Lantus/Levemir

Your personal insulin/carbohydrate ratio:

_____ unit(s) of Humalog/NovoLog per _____ grams carbohydrates eaten. Rapid-acting insulin (Humalog/NovoLog) works best when given 15 minutes before meals and snacks containing more than _____ grams of carbohydrates.

Correction factor example:

Blood sugar = 275
Target blood sugar = 150
Correction factor (constant) = 50

Correction Bolus =
 $\frac{275 - 150}{50} =$
2.5 units Humalog or Novolog

Correction bolus (covering high blood sugar):

A correction bolus is a dose of insulin used to correct high blood sugar down to your target blood sugar. Use this formula: Correction bolus = current blood sugar - target blood sugar, divided by correction factor = # of Humalog/Novolog units to give.

Rules for correcting high blood sugar:

- Correct at mealtimes, unless it has been less than 3 hours since the last rapid-acting (Humalog/NovoLog) injection; however, **do** cover carb intake.
- At bedtime and in the middle of the night, do not correct a blood glucose level unless it is 300 mg/dl or above and then only give **half** of the regular corrective dose. This is to help prevent going too low overnight.

Correction factor



Total dose of rapid-acting insulin:

Insulin/carb ratio
+ Correction for high blood sugar (if needed)
= Total dose

To Learn More

- Endocrine
206-987-2640
- Ask your child's healthcare provider
- www.seattlechildrens.org

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.
- For Deaf and hard of hearing callers
206-987-2280 (TTY)

Things to know when using Lantus/Levemir

- Lantus/Levemir should not be mixed in a syringe with any other insulin.
- Lantus is a long-acting "basal" insulin. It does "peak" slightly 4 to 6 hours after injecting, so may cause middle-of-the-night lows. Check blood sugar five hours after the dose is given, until the Lantus dose is stable. It generally lasts 22 to 24 hours.
- Levemir is usually give twice a day at a consistent time.
- Lantus is clear. The vial for Lantus is taller and thinner than vials for other types of insulin, which helps prevent confusion.
- Storage is the same as for other insulin. The unopened bottles should be kept in the refrigerator. Once open, the bottle may be kept at room temperature and is good for one month.
- Some people find that Lantus stings when injected.

When it's decided that it is time to start Lantus insulin

If Lantus is given at breakfast: Give the dose as instructed

If Lantus is given at bedtime:

- Give NPH/Humalog at breakfast. This will be your last dose of NPH.
- Give Humalog/NovoLog only at dinner, using carb and correction ratios.
- Give Lantus at bedtime.
- Always take your rapid-acting insulin to cover all meals and snacks over ____ gm of carbohydrates. Use your insulin-to-carb ratio.
- Take your rapid-acting insulin (Humalog/NovoLog) to cover high blood sugars at mealtimes, unless it has been less than three hours since the last rapid-acting insulin injection was given. Use your correction ratio formula to calculate your dose (blood sugar minus target divided by correction factor).

Making dose adjustments

Report blood sugar numbers on Mondays, Wednesdays or Fridays before 11 a.m. for 1 to 2 weeks after starting Lantus. For help with dose adjustments:

- By phone on the Blood Sugar Line at 206-987-2640, option 2
- By fax to 206-987-2720
- By e-mail to endonurse@seattlechildrens.org

Seattle Children's offers interpreter services for Deaf, hard of hearing or non-English speaking patients, family members and legal representatives free of charge. Seattle Children's will make this information available in alternate formats upon request. Call the Family Resource Center at 206-987-2201.

This handout has been reviewed by clinical staff at Seattle Children's. However, your child's needs are unique. Before you act or rely upon this information, please talk with your child's healthcare provider.

© 2010, 2011 Seattle Children's, Seattle, Washington. All rights reserved.

5/11
PE567