Caring for Your Child  
Combination Bolusing with Your Pump

Insulin pump users usually give a pre-meal bolus in a single dose that is delivered over a few seconds. Sometimes it would be better to give the insulin over a longer period of time. The Combination Bolus feature on your pump helps you to do this.

Different insulin pumps use different names for Combination Boluses. They are:

- **Square Wave or Extended bolus**: You set the dose and a longer time interval to give meal bolus.

- **Dual Wave**: You give a percentage of the bolus at the start of the meal and the rest over a set duration of time.

Why use Combination Bolusing?

Combination bolusing is closer to how a real pancreas works when you eat a big, high fat meal. Fat slows down digestion and blood sugars stay high for a longer time. A combination bolus gives some insulin right when you eat to cover initial highs. It also gives more insulin over a set period of time to cover later highs.

Use combination boluses for:

- High fat meals like pizza, hoagies, cheese steaks
- Buffet meals
- Holiday meals
How do I split the dose?

There is no magic rule that applies to everyone. Try different ways of dosing to find out what works for your child.

Step 1: Begin with a 50/50 split:

- Give 50% of bolus at the start of the meal. This is called 50% Normal Bolus.
- Give 50% of bolus over 2 hours. This is called 50% Square Wave or Extended Bolus.
  - Calculate dose. If you use 1 unit for 10 grams of carbs, dose is 6 units.
  - Split the dose 50/50.

  50% Normal = 3 units at start of meal
  50% Square Wave = 3 units over the next 2 hours

Step 2: Check if Normal Bolus worked

- Check blood sugar 2 hours after eating. Is blood sugar in target range?
  - If high, then the Normal Bolus was not enough. Try 60/40 split the next time your child eats that meal (if still high, could try 70/30 split)

  60% Normal = 4 units at start of meal
  40% Square = 2 to 2.5 units over next 2 hours

Step 3: Check to see if Square Wave or Extended Bolus worked

- Check blood sugar at 4 and 6 hours after the meal. Is the blood sugar in target range?
  - If high at 4 hours, increase the amount of insulin given over the 2 hour square wave/extended bolus or extend time period (to 3-4 hours) the next time your child eats this meal.
  - If the blood sugar is in range at 4 hour check, but high at the 6 hour check – increase the square wave/extended bolus by 5-10% and extend the time to 3 or 4 hours.

All of this takes some trial and error. When the Blood Glucose is in range at the 2, 4, 6 hour check, you have the results you wanted!!