Treatment of Hyperglycemia to Prevent Diabetic Ketoacidosis (DKA) for Insulin Pump Users

- If the flow of insulin is stopped, DKA can develop much faster (2 – 3 hours) when on pump therapy because the intermediate-acting insulin is no longer present. Causes of lack of insulin flow may be infusion set blockage or leak, incorrect pump programming, kink in cannula, plastic needle, disconnected pump or empty reservoir.

- Other causes of hyperglycemia are illness, loss of insulin potency (due to outdated insulin or improper storage), bolus taken at the wrong time, prolonged site use or poor absorption from site.

- Blood glucose monitoring at least 4 times/day is essential to identify if DKA is happening.

- Guidelines for DKA prevention are:
  
  **If you have one unexplained blood sugar over 15 mmol/L:**
  - Check ketones
  - Take insulin correction bolus using correction formula.
  - Check the insertion site, tubing connections, basal rates.
  - Check blood sugar in one hour.

  **If blood sugar is not improving at the one hour check:**
  - Check ketones.
  - Take correction dose of rapid-acting insulin by injection with syringe or insulin pen. More insulin than normal (maybe 10 – 15% extra in addition to usual correction dose) may be needed if ketones have been present for several hours.
  - Change infusion set.
  - Drink 250 – 500 mls (1 – 2 cups) non-sugar liquids every 30 minutes to prevent dehydration.
  - Follow rules for sick day management (should have supplies organized in a box for easy access in a box for easy access – see Sick Day Supply list below)

**Continue checking blood sugars and ketones every 1 – 2 hours.**

- If your blood sugar is over 15 mmol/L, ketones are positive, you have nausea and/or vomiting, give correction insulin dose by syringe/pen every 2 hours.
• If your blood sugar is over 15 mmol/L and ketones are negative, give correction insulin bolus by pump every 4 hours until your blood sugar is normal.
• *Never Stop Basal Pump Infusion Even If Unable To Eat*

Remember….call you health care provider if:

• You are sick and on your usual basal rate but unable to keep your blood sugars above 6 mmol/L.
• If you are vomiting and unable to keep fluids down.
• Ketones are present (moderate to large amounts) for more than 4 hours.
• Ketones have risen a level despite taking extra insulin correction boluses.
• You develop signs of dehydration such as a dry mouth and tongue, cracked lips, sunken eyes and dry, flushed skin.

Sick Day Supplies

| Sugar-free liquids (water, diet drinks, broth) for replacing fluids |
| Fluids that contain sugar (regular pop, popsicles, Jell-O) to replace solid food |
| Thermometer |
| Medications for fever, cough, congestion, nausea & vomiting |
| Extra blood glucose and ketone strips |