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TROUBLESHOOTING HIGH BLOOD GLUCOSE WITH A PUMP

When using an insulin pump, only rapid-acting insulin is used. Special attention to high blood glucose must be taken seriously. Without any long-acting insulin available, glucose levels can rise quickly if the insulin delivery is accidently interrupted. If left untreated, a serious condition called diabetic ketoacidosis (DKA) can develop quickly. See our handout *Sick Day Management for Insulin Pumps* for more information.

Several things can cause the glucose level to rise. Common causes may include illness, stress, infection, missed insulin doses, or the infusion set has come out. If the blood glucose is above 15 mmol/L at any time, check for ketones. Then troubleshoot for the cause.

Things to consider when troubleshooting:

Infusion set:

- Did you remember to prime the tubing and cannula?
- Is there air in the tubing?
- Can you see the cannula under the skin?
- Is everything connected: cartridge and reservoir?
- Are there any leaks or can you smell insulin?
- How long has the site been in?
- Any redness or swelling?
- Any lumps/bumps at infusion site? Rotate sites to prevent over use!

Pump:

- Bolus history — did you forget your last bolus?
- Is the bolus being given 10–15 minutes before eating?
- Any recent alarms?
- Is the reservoir empty?
- Is the date and time correct?
- Are your basal rates correctly programmed?

User related:

- Growth
- Illness
- Hormones/monthly periods
- Dramatically decreased activity level
- Constant correcting?

Insulin:

- How long has the insulin been in the pump?
- Is the insulin used in the pump expired or cloudy?
- Has the insulin been exposed to extreme temperatures — too hot/cold

If ketones are present, ALWAYS give insulin by pen or syringe first, change the insulin and infusion set before troubleshooting the problem! Increased blood glucose with nausea and vomiting = ketones!