

Trouble shooting on a pump

My blood glucose is raised and I can't explain why:

There may be an issue with one or more of the following:

The Infusion Set:

- Is the tubing primed or filled with insulin?
- Is there air or blood in the tubing?
- Did you remember to fill the cannula with insulin after inserting the new set? (not required for steel cannulas)
- Is the tubing connected to the cartridge?
- Is the set connected to the body?
- Are there any leaks?
- Is the cannula dislodged or kinked?
- Has the infusion set been in longer than 2-3 days?
- Is there redness, discomfort, or blood at the site?
- Has the cannula been inserted into a lumpy site?

The Insulin pump:

- Did you forget your last bolus? (review bolus history)
- Have you received any recent alarms?
- Has your battery run low?
- Is your cartridge/reservoir empty?
- Is the date and time correct?
- Are your basal rates programmed correctly?
- Have you done a recent self test?

The Insulin:

- Is your insulin expired/inactive?
- Is it cloudy or clumped?
- How long has the insulin been in the cartridge and tubing?
- Has your insulin been exposed to freezing temperatures?

If you cannot see any obvious causes, change the set; cannula, tubing and reservoir of insulin.

If you are unwell or your blood glucose level is very high, check for ketones and follow sick day rules advice.

Make sure you have back up pens of quick acting and background insulin available in case of pump failure.

If there is an issue with the actual pump e.g. error message – contact your pump companies support line.

DERBY INSULIN PUMP SICK DAY RULES

If your glucose is unexpectedly greater than 14mmol/l or you feel unwell you should check for ketones. If you have 1.5-3mmol/l of ketones in your blood or + or ++ of ketones in your urine then you urgently need more insulin to prevent yourself developing diabetic ketoacidosis, which will make you very unwell.

You must come to hospital (Emergency Department) immediately if:

- Ketones are not resolving despite following these instructions
- You are vomiting and unable to keep fluids down

Small to moderate ketones (blood ketones 1.5-3mmol/l , urine + or ++)

1. Take **10%** of your total daily dose (TDD, information available in your pump) as an extra bolus.
2. Recheck your glucose and ketones in 1 hour, if no improvement administer 10% of your total daily dose as fast acting insulin using a syringe or pen (Humalog, Novorapid for example) and change your insulin, pump infusion set and cannula.
3. Bolus 10% of your total daily dose every 2 hours (in addition to bolus required for carbohydrate) until the ketones have cleared.
4. Use a temporary basal rate to increase your insulin by **+30%**.
5. Recheck you glucose and ketones 2 hourly. If ketones are increasing increase basal insulin to +50% and follow instructions below.

Moderate to large ketones (blood ketones greater than 3.0 mmol/l , urine +++ or more)

1. Take **20%** of your total daily dose (information available in your pump) as an extra bolus.
2. Recheck your glucose and ketones in 1 hour, if no improvement administer 10% of your total daily dose as fast acting insulin using a syringe or pen (Humalog, Novorapid for example) and change your insulin, pump infusion set and cannula.
3. Bolus 20% of your total daily dose every 2 hours (in addition to bolus required for carbohydrate) until the ketones have cleared.
4. Use a temporary basal rate to increase your insulin by **+50%**.
5. Recheck you glucose and ketones 2 hourly. If ketones do not reduce within 1-2 hours increase your basal rate further to +100% and seek medical help!

