

Sick day management for insulin pump users

Introduction

Feeling ill can cause a rise in your blood glucose levels. This is due to the stress hormones being produced such as cortisol and adrenaline. Preventing and treating rising blood glucose levels requires extra insulin to stop the breakdown of fat and makes sure that the glucose in your blood is used for extra energy.

Ketones can be produced when you do not eat and if you take less insulin. Ketones are acidic and toxic to the body which can cause diabetic ketoacidosis.

Diabetic Ketoacidosis (DKA)

This is a serious condition resulting in urgent medical attention. Symptoms include:

- Nausea, vomiting and/or stomach pain.
- Increased thirst and/or a dry mouth.
- Rapid breathing or shortness of breath.
- A fruity-smelling breath.
- Feeling drowsy, weak, or confused.

Sick Day Action Plan

You should follow your sick day action plan if:

- You feel unwell, even if your blood glucose is in your target range.
- Your blood glucose level is greater than 13.9 mmol/L for 2 hours or more, even if you feel well.
- There are positive ketones in your blood more than 0.6mmol/l.
- **Check ketones.** Check ketones every 2 to 4 hours when you are unwell or when blood glucose levels have been above 13.9mmol/L for 2 hours or more. Check even if you do not feel unwell.
- Once ketones are detected (more than 0.6mmol/l) or if you have symptoms of DKA, you should check ketones every 1 to 2 hours until they return to normal.
- A blood ketone level below 0.6 mmol/L is considered normal.
- **Continue taking insulin and adjust your doses if needed**
- Whilst you should never stop having insulin, your pump rates may need adjusting.

If you use a closed-loop pump ('auto mode' function) you may need to switch back to manual mode while you are unwell to allow the use of temporary increased basal rates if this is part of your Sick Day Action Plan.

If you feel unwell:

- Check blood glucose levels (BGLs) and ketone levels.
- Never stop having insulin delivery but your pump rates may need adjusting.
- Continue to eat and drink if possible.
- Try to have 125-250 mls fluid per hour to avoid dehydration.

If BGL is below 4.0 mmol/L:

- Treat hypoglycaemia with fast-acting carbohydrate (food or fluids or both).
- Check BGL every 10-15 minutes until above 4.0 mmol/L, then monitor more regularly for the next few hours.

Keytones

No Ketones Less than 0.6 mmol/L on blood test	Ketones present More than 0.6 mmol/L on blood test
• Check BGLs and ketones every 2-4 hours. • Use your usual carb ratio when you eat or drink carbohydrate foods or fluids¹ • Use your usual correction doses to correct elevated BGLs, even if you are not eating • If BGLs are persistently elevated despite giving correction doses, consider increasing basal rates by 10-20% for 2 hours and repeat as needed until BGLs are back in range • If you are vomiting or have diarrhoea and BGLs are persistently low, reduce basal rate by at least 20% for 4 hours and repeat as needed until BGLs have increased.	Change pump site, including cannula, tubing and reservoir. Follow correction advice below: Check BGLs and ketones every 1-2 hours. Ketones 0.6 mmol/L to 1.5 mmol/L • Double your usual correction doses. • Consider using an increased temporary basal rate of 10 – 20% for 2 hours and then review. • If the correction on your pump has not worked, revert to fasting acting insulin pen and consider seeking medical attention. Ketones 1.5 mmol/L or more. • Double your usual correction doses. • Consider using an increased temporary basal rate of 30 – 50% for 2 hours and then review. • If the correction on your pump has not worked, revert to fasting acting insulin pen and consider seeking medical attention.

If you are on a hybrid close loop you will need to revert to manual mode