



# Managing unexplained hyperglycaemia on an insulin pump

## Patient information factsheet

**This leaflet is for patients who have a good understanding of their diabetes and can troubleshoot problems / self-manage their condition**

- An infusion set connects your insulin pump to your body. Sometimes the infusion set can fail. When this happens, it is important that it is noticed, as it can lead to your body developing ketosis/ketoacidosis within a matter of hours.
- When the body experiences a lack of insulin, it cannot use glucose for energy, and it starts to break down fat for energy instead. This leads to the body producing lots of ketones, which can make the blood acidic. This is dangerous for people with diabetes.
- All people with diabetes who use an insulin pump should be aware that their infusion set can fail sometimes, and they should know what to do if this happens.
- For example, sometimes the cannula (the thin tube that leads from the insulin pump into your body) can kink when it is being inserted into your vein. You must carry out infusion set changes early in the day and not before going to bed. This is because you need to check your glucose 1 to 2 hours after you have inserted your cannula to be sure that there are no problems.

### Rules for the management of unexplained hyperglycaemia:

**If blood glucose is over 13.0 mmol/L. You must:**

- 1) Take a correction bolus using your pump.
- 2) **Check blood glucose and ketones in 1-2 hours, if there has been no change or the blood glucose has risen further, take a correction injection with your syringe or pen (your pump site could be faulty).**
- 3) Change your cannula, infusion set and the insulin reservoir.
- 4) Check **blood glucose** and ketones in 1-2 hours and take a correction using your pump if **blood glucose** is still above your target range.
- 5) You must use the sick day rules if ketones are positive (see separate handout for sick day rules)
- 6) **You must not go to sleep with unexplained hyperglycaemia which has not resolved or within 2 hours of your new set / patch or pod change.**



## Patients using Hybrid Closed Loop (HCL) systems:

For unexplained hyperglycaemia or sick day rules please refer to the HCL information leaflet

**Remember:**  
**"If in doubt change it out!"**  
**If glucose is above 15.0mmol/L for more than 2 hours and not reducing, change cannula**

## Possible causes of unexplained hyperglycaemia:

Infusion set	Insulin pump	Insulin
Is the tubing primed and filled with insulin?	Did you forget your last bolus? <i>*HINT:</i> look at your bolus history on the pump	Is your insulin expired or inactive?
Is there air in the tubing?	Have you given the correct bolus according to the carbohydrate content of your meal?	Has your insulin been exposed to extreme temperatures?
Did you remember to fill the cannula with insulin after inserting a new set?	Have you received any recent alarms?	How long has the insulin been in the cartridge and tubing?
Is the tubing connected to the cartridge?	Is your cartridge empty?	
Is the set connected to your body?	Is the date and time correct?	
Are there any leaks?	Are your basal rates programmed correctly?	
Is the cannula dislodged or kinked?		
Has the infusion set been in longer than two to three days?		
Is there redness or discomfort at the site?		
Is there blood on/at the site?		
Has your set been off longer than one hour (some people do this for exercise)?		
Has the cannula been inserted in an area of hard / lumpy skin?		



## Back up insulin pens

**Make sure** that you have extra or spare insulin pens available (in date) and on repeat prescription, in the event of insulin pump failure. This includes both quick acting insulin (e.g., NovoRapid or Humalog) and long-acting basal insulin (e.g., Tresiba, Lantus, Levemir).

### Patient advice and liaison service (PALS)

If you have a compliment, complaint or concern please contact our PALS team on 020 7288 5551 or [whh-tr.PALS@nhs.net](mailto:whh-tr.PALS@nhs.net)

If you need a large print, audio or translated copy of this leaflet please email [whh-tr.patient-information@nhs.net](mailto:whh-tr.patient-information@nhs.net). We will try our best to meet your needs.

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