

Patient information

Managing Hyperglycaemia and Illness with pump therapy

Diabetes and Endocrinology Department

This leaflet has been developed to help you manage illness and high blood glucose when using insulin pump therapy.

On an insulin pump, a **glucose level greater than 13mmol/L** is considered high (hyperglycaemia) and action should be taken.

Possible causes of high glucose levels

- Interrupted insulin flow (e.g. air bubbles, cannula problems, empty reservoir).
- Insufficient basal or bolus insulin.
- Exercise (high intensity) for example cycling, running, aerobics.
- Stress or excitement.
- Illness.

During illness you may need more insulin as your body produces stress hormones and becomes resistant to insulin.

A high glucose level and ketones tell you that you need extra insulin.

To work out how much extra insulin you need you will need your total daily dose (TDD), which includes basal and bolus doses. You will find this in your pump history.

Managing high glucose on a pump

Check for any pump delivery problems and manage them (see trouble shooting guide provided with your insulin pump or phone the pump manufacturer). It is important to troubleshoot to identify and manage insulin delivery.

If however, you have established that there is no obvious delivery problem, and your pump is working normally then **check for ketones**:

If blood ketones are <1.5 mmol/L or trace on a urine test:

- Give your correction dose of bolus insulin if glucose is raised, even if not eating (either by working it out yourself or by entering your glucose level into your pump and using the bolus calculator).

- Sip sugar free fluids (at least 100ml/hour).
- Retest your glucose one-two hours later.
- Give correction doses every two hours until glucose levels are in target.
- If glucose levels are persistently above target - consider a 10-20% increase in the basal rate with the use of the temporary basal rate option on your pump.

If blood ketones are between 1.5-3 mmol/l or +/-+ on urine test:

- Give 10% of Total Daily Dose (which includes basal and bolus doses) every two hours **plus** usual Carbohydrate ratios if eating.
- Sip sugar free fluids (at least 100ml/hour).
- Temporarily increase your basal rates by 30%.
- Retest your glucose levels every one-two hours and ketones every two hours until your ketones are less than 1.5mmol/l.

If blood ketones are >3 mmol/l or +++/++++ on urine test:

- Give 20% of Total Daily Dose, which includes basal and bolus doses every two hours Plus usual Carbohydrate ratios if eating.
- Sip sugar free fluids (at least 100ml/hour).
- Temporarily increase your basal rates by 50%.
- Retest your glucose levels every one-two hours and ketones every two hours until your ketones are less than 1.5mmol/l.

If your glucose level has not improved after your first correction dose repeat your correction doses as above. If after two corrections with your insulin pump and this has not improved your blood glucose readings, please give your next (3rd) correction dose with a pen or a syringe and change your cannula and cartridge.

If you vomit, are unable to keep fluids down, or unable to control your glucose or ketone levels, you must go to the hospital as an emergency.

Never suspend your pump

Feedback

Your feedback is important to us and helps us influence care in the future.

Following your discharge from hospital or attendance at your outpatient appointment you will receive a text asking if you would recommend our service to others. Please take the time to text back, you will not be charged for the text and can opt out at any point. Your co-operation is greatly appreciated.

Further information

If you have any questions please contact:

The Diabetes Centre

Aintree Hospital

Lower Lane Liverpool

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