



Hyperglycaemia (high blood glucose level)

Causes & symptoms

Hyperglycaemia means high blood glucose level

If your child's blood sugar is above 14 mmol, first make sure they have had their usual insulin doses, and have not forgotten one (and that they have not eaten sweets).

If usual insulin has been given, the blood sugar is above 14 mmol and it is lunch time:

Correction dose of Novorapid + usual meal dose of Novorapid can be given.

The correction dose of insulin is based on your body's sensitivity to the insulin. Your diabetes specialist nurse/doctor will set this for you. It may be set up in your smart meter (Insulinx/Libre meter).

See next section for calculating correction dose of Novorapid if this has not already been given to you.

A blood sugar reading should be taken two hours after the Novorapid dose, to ensure the blood sugar level has come down, and not gone low. If it is low, take usual action of giving sugary drink and snack.

If the blood sugars have been high for 24 hours, i.e., 14 and above, their insulin doses have to be increased. If you are able to increase, do as advised by the diabetes team. If not call the diabetes team for advice.

If your child is unwell and has blood sugars above 14mmol, and has ketones above 0.6 – Follow sick day rules for giving extra doses of Novorapid. Novorapid can be given as long as it is at least two hours since last dose of usual insulin.

If blood sugars remain high, contact diabetes team/PAU for advice. Do not give more than two doses of extra Novorapid in 24 hours without seeking advice.

DIABETIES TEAM CONTACT DETAILS

Monday – Friday 9am - 5pm

**Denise/Meeta/Pauline: 01582 497112 or 01582 491166 - ask for bleep 256
Or Denise: 07964396874 Meeta: 07964404974 Pauline: 07976 233465**

Weekends and Evenings

**PAU – Children's Ward - 01582 497401
Or 01582 491166 - ask for bleep 733 (Paeds SpR on-call)**



Correction doses

A correction dose can be given if you are unwell, have ketones, or if you have unexpected high sugars.

If your blood sugar is above 7 mmol, it would be ideal to give a correction dose of insulin. The following will help you work out how much one unit of insulin will reduce your blood sugar levels by.

To work out your correction dose:-

1. Add the total daily amount of insulin, including the long and short acting doses.
2. Then divide 100 by this number.
3. This gives the amount the blood sugar would fall if 1 unit of fast acting insulin was given (Novorapid).

Example.	Total daily dose 10, 10, 12 and 18.	= 50
	Divide 100 by this number	= 100/50 = 2

Your blood sugar levels would fall by 2mmol, when 1 unit of insulin is given.

Your doses:-

Add total daily dose =

Divide 100 by this number =

Your blood sugar will fall bymmol when 1 unit of insulin is given.

The target would be to get your blood sugar to 6 mmol. How much insulin would you need to give if:

- Your blood sugar is 12mmol, and you need to get it down to 6 mmol, What dose would you give?
- Your blood sugar is 18mmol, what dose would you give?
- Your blood sugar is 14, and you are going to give your evening meal dose of insulin. You will need to give the usual dose, plus the correction dose. What is the total dose you will need to give?

Please note this should only be used for your Novorapid doses, and at least two hours should be left between each correction dose.

Ketones

Ketones can develop when you are unwell or if you do not have enough insulin in your body. If your blood sugars are high due to illness or if you have missed some of your insulin injections, the body will start to break down fats in your body to use for energy. This will then produce ketones. You can also develop ketones when your blood sugar is low called 'starvation ketones'.



Symptoms

- Thirst
- Tummy pain
- Passing more urine
- Drowsiness, rapid breathing
- High blood sugars
- Nausea or vomiting

If you have any of these symptoms, in addition to checking your blood sugar, check your blood ketones, using the Optium/Libre meter.

Ketones

The ketone meter can read between 0.0 and 8 mmol/L (ideal reading = 0.0).

If the ketone level is below 0.6 mmol/L, it is normal.

If ketones are > 0.6 mmol/L when blood glucose is 4-7 (starvation ketones) you need to drink extra fluids containing sugar (150mls as sips over 2hrs and repeat every 2 hrs). Monitor blood glucose very closely, extra insulin may be required when blood glucose starts rising

If blood glucose (BG) > 14mmol/L and ketones are >0.6 then extra Novorapid doses may be required. **Follow the sick day rules.**

A high level of ketones can lead to build up of acid in your body and make you feel very unwell. This is called **Diabetic Keto-acidosis or DKA**. Increasing the insulin will prevent ketones from developing, will make you feel better and prevent DKA.

Symptoms of DKA:

- Abdominal pain/vomiting, dehydration, rapid breathing, drowsiness

If vomiting, and ketones are above 1.5, despite two correction doses, you may need to be admitted to the Children's Ward. Call for advice on the numbers below or if very unwell, attend A&E immediately.



Never miss your insulin. Even if you are unwell and do not feel like eating, you will still need some insulin but your dose can be adjusted. Please call for advice.

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