

# Sick Day Rules: Information for Parents and Carers - Insulin Pump Therapy

## Paediatric Diabetes Department

### Sick Day Rules for insulin pump therapy

If you suspect your child may be unwell, make sure you have a good supply of the following:

- Blood ketone strips (ensure they are in date)
- Sweet food and drinks
- Rapid-acting insulin
- Blood glucose strips

### What is happening inside your child's body?

One of the body's responses to stress and illness is to produce more glucagon (blood glucose raising hormone). This will most likely increase their insulin requirements. However, it is also usual to eat less when feeling unwell; therefore, these two factors must be considered and managed throughout the days your child is unwell.

### Important tips

- Test your child's blood glucose levels **2-4 hourly** depending on severity of illness.
- Check your child's blood regularly for **ketones**. If levels are above 0.6mmol/mol, see advice under "**What are ketones?**"
- Encourage your child to **drink plenty of water** or unsweetened fluids. When the blood glucose levels are high, your child is likely to be passing more urine and therefore, more likely to become dehydrated.
- If your child is **unable to eat normally** replace their meals/snacks with something sweet e.g., biscuits, ice cream, fruit juice, milkshakes etc to give their body nourishment and to prevent hypoglycaemia.



## Do I need to adjust my child's insulin dose?

Depending on the illness the blood glucose levels may increase, and you will need to give more rapid-acting insulin i.e., NovoRapid or Humalog. As a general rule, you will need to give your child an extra bolus of fast acting insulin as a correction dose, if their blood glucose levels are above 10mmol. Alternatively, follow the advice on their insulin pump.

If the blood glucose levels are constantly low, your child will need *less* fast-acting insulin i.e., NovoRapid or Humalog. (This only tends to occur with younger children or with vomiting and diarrhoea). Remember the only way to find out what your child's requirements are is to test your child's blood glucose levels regularly.

## What are Ketones?

Ketones are made when the body breaks down fat to use as energy when it cannot use carbohydrates. You can check if your child has ketones by testing a drop of their blood with a blood ketone meter. All families should have one of these for home and school. Please speak to your Diabetes nurse if you have not been given one.

## Diarrhoea and Vomiting

The amount of insulin reduction will depend on the blood glucose levels and presence of vomiting and/or diarrhoea. If the blood glucose levels keep dropping despite intervention, we advise to set a reduced temporary basal rate of between 50 - 75% of the normal basal rate whilst the diarrhoea or vomiting continues.

## Who to contact for advice

The Paediatric Diabetes Nurses are not always available during office hours (09:00 -17:00) on **01932 723314**

## Urgent and Out of Hours access

Out of hours and urgent access is available via the General Paediatric Team through Paediatric A&E or by contacting switchboard for the on call General Paediatric Registrar on 01932 872000.

**If not tolerating drinks/fluids – go to your local A&E Department**

*\*\*Reference: University College London Hospital, Paediatric Diabetes Team.*

## Managing high blood glucose levels with Ketones - Insulin Pump therapy

Blood Ketones	1. Actions	2. Additional Actions based upon blood glucose level
Less than 0.6 mmol/L	<ul style="list-style-type: none"> <li>Calculate Correction dose using pump calculator.</li> <li>Give advised correction via pump</li> <li>Re-check in 1 hour</li> </ul>	No additional action
0.6 – 1.4 mmol/L	<ul style="list-style-type: none"> <li>Look at suggested pump correction</li> <li>Increase correction dose by 50%</li> <li>Give correction by insulin pen</li> <li>Change pump cannula</li> <li>Encourage fluids</li> <li>Re-check in 1 hour</li> </ul>	If blood glucose level >14 mmols, program temporary basal rate for 4 hours (200% or +100%)
1.5 – 2.9 mmol/L	<ul style="list-style-type: none"> <li>Look at suggested pump correction</li> <li>Double correction dose and give this using an insulin pen</li> <li>Change pump cannula</li> <li>Encourage fluids</li> <li>Re-check in 1 hour</li> </ul>	
More than 3.0 mmol/L	<ul style="list-style-type: none"> <li>As above</li> <li>Re-check in 1 hour</li> <li>Call Diabetes Team for advice – may need to go to A&amp;E</li> </ul>	

## Managing blood glucose <5.5 mmols with Ketones - Insulin Pump therapy

Blood Ketones	1. Actions	2. Additional Actions based upon blood glucose level
Less than 0.6 mmol/L	Treat low blood glucose if hypoglycaemic	If experiencing recurrent hypos, set decreased temporary basal for 2 hours (50% or -50%)
0.6 – 1.4 mmol/L	<ul style="list-style-type: none"> <li>Take 20g carbohydrate and clear fluids containing sugar</li> <li>Re-check blood glucose and ketones in 2 hours</li> </ul>	
1.5 – 2.9 mmol/L	<ul style="list-style-type: none"> <li>Take 20g carbohydrate and clear fluids containing sugar</li> <li>Check blood glucose and ketones after 2 hours</li> <li>Repeat above steps again</li> <li>If remains unchanged after 4 hours, then seek urgent advice</li> </ul>	
More than 3.0 mmol/L	<ul style="list-style-type: none"> <li>As above</li> <li>If concerned, call Diabetes Team for urgent advice / Go to A&amp;E</li> </ul>	

## What if the ketones don't go away and my child isn't getting better?

Ketones are an acid and can make your child very sick because too many can alter the acidity of the blood and may cause diabetic ketoacidosis (DKA). **This is life threatening and requires urgent medical attention.**

If ketones are above 0.6mmol/mol, watch out for the following signs and symptoms of DKA:

- Nausea and vomiting
- Abdominal pain
- Deep rapid breathing
- Breath smelling like pear drops or nail varnish
- Drowsiness
- Eventual unconsciousness

## Remember

- To treat the symptoms of the illness as well e.g., paracetamol (Calpol) for a temperature. Ask your pharmacist for sugar free alternatives
- To visit your GP if the illness needs treatment e.g., antibiotics for chest infection.
- To check blood glucose levels and ketones regularly and act upon them if abnormal.
- To call the diabetes team if you have any questions or concerns. It may mean your child needs to come into hospital for extra fluids via a drip or extra insulin.

**If not tolerating drinks/fluids – go to your local A&E Department**

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**We can provide interpreters for a variety of languages, information in larger print or other formats (e.g. audio) - please call us on 01932 723553.**



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