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.

To use the Text Relay service, prefix all numbers with 18001.

Ashford Hospital
London Road
Ashford, Middlesex
TW15 3AA
Tel: 01784 884488
Website: www.ashfordstpeters.nhs.uk

St. Peter's Hospital
Guildford Road
Chertsey, Surrey
KT16 0PZ
Tel: 01932 872000
How does illness affect your blood glucose?

During an illness or infection, the body will release extra glucose into your bloodstream in a bid to help combat the illness. When you are ill your body may need more insulin. Your blood glucose levels can rise in response to illness even if you are not eating.

This may make you feel thirsty and pass urine more frequently, which can make you dehydrated. Your body needs more insulin and you may need to increase the dose to combat this.

If you have Type 1 diabetes and you are not having enough insulin, your body will produce ketones when you are unwell, which can result in a serious condition called diabetic ketoacidosis (DKA).

It is possible to manage your diabetes during illness effectively and keep your blood glucose levels down by adjusting your insulin. The advice in this leaflet is to help you with this.

Please note that INSULIN SHOULD NEVER BE STOPPED as the body always needs it although dose adjustments may be needed.

BE PREPARED!

Make sure you have a good supply of the following in case you are unwell:

- Unopened and in date testing strips and urine or blood ketone sticks (if on insulin).
- Sweet food and drinks such as small cartons of long life orange juice, fun sized jelly baby bags and a bottle of Lucozade.
- Stock of foods like soup or ice cream.

References

TREND-UK (2013)
Diabetes: What to do when you are ill.
Available at: [http://www.trend-uk.org](http://www.trend-uk.org)

Diabetes Research & Wellness Foundation (2014)
Managing Diabetes when you are ill.
Available at: [http://www.drwf.org.uk](http://www.drwf.org.uk)

Diabetes.co.uk: The Global Diabetes Community (2013)
Diabetes and Being Ill - Diabetes and Illness.
Available at: [http://www.diabetes.co.uk/diabetes-and-illness.html](http://www.diabetes.co.uk/diabetes-and-illness.html)

Further Information

We endeavour to provide an excellent service at all times, but should you have any concerns please, in the first instance, raise these with the Matron, Senior Nurse or Manager on duty.
If they cannot resolve your concern, please contact our Patient Experience Team on 01932 723553 or email asp-tr.patient.advice@nhs.net. If you remain concerned, the team can also advise upon how to make a formal complaint.

Author: Jo McBride
Department: Diabetes
Version: 2
Published: Jan 2019
Review: Jan 2021
When to call your GP, diabetes specialist nurse or healthcare professional for immediate help

- If you are pregnant
- If your blood glucose levels are constantly higher than 15 mmol/L despite following the advice in this leaflet, or you have positive ketones and cannot adjust your insulin to manage these.
- If you cannot keep food / fluids down for more than 4 hours.
- If you have acute abdominal pain, increasingly drowsy or shortness of breath.
- If despite taking the advice in this leaflet, your symptoms are getting worse.

Managing blood glucose levels after illness

Blood glucose levels may take a few days to stabilise even after you feel back to normal so we advise that you keep testing more often than usual until your blood glucose levels settle down.

Managing Type 1 diabetes when you are ill

Rest: Strenuous activity should be avoided as this can increase the glucose levels during illness.

Symptoms: Treat symptoms such as high temperature or a cough with basic medicines such as painkillers. Cough medicines and other over the counter preparations do not have to be sugar free varieties if they are taken in small quantities.

Eating & Drinking: Try to drink at least 2.5L of sugar free fluid in 24 hours to prevent dehydration (approx. 100ml hour). Try to eat as normal but if you cannot manage your usual meals, replace these with light and easily digested foods unless you have diarrhoea and vomiting.

See table below for a list of alternative food options:

<table>
<thead>
<tr>
<th>Type of food alternative</th>
<th>Amount (Each serving provides approximately 10g of carbohydrate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lucozade Energy</td>
<td>50 mL 2 fl oz ¼ glass</td>
</tr>
<tr>
<td>Fruit Juice</td>
<td>100 mL 4 fl oz ½ glass</td>
</tr>
<tr>
<td>Cola (NOT diet)</td>
<td>100 mL 4 fl oz ½ glass</td>
</tr>
<tr>
<td>Lemonade (NOT diet)</td>
<td>150-200 mL 5-7 fl oz ¼ - 1 glass</td>
</tr>
<tr>
<td>Milk</td>
<td>200 mL 7 fl oz 1 glass</td>
</tr>
<tr>
<td>Soup</td>
<td>200 mL 7 fl oz 1 mug</td>
</tr>
<tr>
<td>Ice cream</td>
<td>50g 2 oz 1 large scoop</td>
</tr>
</tbody>
</table>

Be prepared – make sure you have sugary fluids at home in case you do not feel like eating.

Insulin: Doses may need to be adjusted, depending on the trend seen on blood glucose testing. Glucose testing should be 2-4
hourly until glucose levels are stable. Insulin must never be stopped as illness increases the body’s insulin requirements.

**See charts pages 5-6 for Managing Type 1 diabetes when you are ill.**

**Ketones:** Ketones are an acid made when the body breaks down fat to use as energy when it cannot use carbohydrates. Urine ketones should be tested for on each trip to the toilet when glucose levels are above 13mmol/L. Alternatively if you have an appropriate meter, blood ketones could be measured 2 hourly.

If ketones do not go away and build up, they can alter the acidity of the blood. This is known as diabetic ketoacidosis (DKA). This is potentially life threatening and requires **URGENT** medical attention.

The signs and symptoms of DKA:
- Nausea and vomiting
- Abdominal pain
- Deep rapid breathing
- Breath smelling like pear drops or nail varnish
- Drowsiness

Follow the advice on the charts and you develop symptoms and/or ketone levels are increasing, you must seek medical attention.

---

**Managing your Type 2 diabetes when you are ill**

<table>
<thead>
<tr>
<th>Test blood glucose level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sip sugar free liquids at least 100ml/hr</td>
</tr>
<tr>
<td>Eat as normal if possible, if not see suggested meal replacements</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>If your blood glucose is less than 4mmol/L</th>
<th>If your blood glucose is between 4-11mmol/L</th>
<th>If your blood glucose is more than 11mmol/L</th>
</tr>
</thead>
<tbody>
<tr>
<td>treat as hypoglycemia</td>
<td>Take insulin as normal</td>
<td>take extra insulin</td>
</tr>
</tbody>
</table>

Take your usual insulin dose and if your blood glucose level is **above 11mmol/L** take additional insulin as below

<table>
<thead>
<tr>
<th>Blood glucose</th>
<th>Extra units</th>
</tr>
</thead>
<tbody>
<tr>
<td>11-17mmol/L</td>
<td>Add 2 extra units to each dose</td>
</tr>
<tr>
<td>17.1-21.9mmol/L</td>
<td>Add 4 extra units to each dose</td>
</tr>
<tr>
<td>Above 22mmol/L</td>
<td>Add 6 extra units to each dose</td>
</tr>
</tbody>
</table>

**Call your GP or nurse if still elevated and if you usually take more than 50 units in total daily, you should double these above adjustments.**

**You must** seek urgent medical advice if your blood glucose levels are still elevated or if you start vomiting.

**Do not** stop taking your insulin even if you are unable to eat.
• If you are taking other tablets such as Linagliptin / Saxagliptin / Sitagliptin / Vildagliptin or Pioglitazone continue to take them.

• If you are on a GLP-1 agonist such as Byetta (Exenatide) / Victoza (Liraglutide) / Lyxumia (Lixisenatide) / Bydureon (Exenatide once weekly) / Trulicity (Dulaglutide) and develop abdominal pains, nausea and vomiting, stop the medication immediately and seek medical attention.

• You may need to increase the dose of your tablets or even need insulin injections for a short time if your blood sugar levels are high while you are ill. This is especially relevant if you are ill enough to need to be admitted to hospital or if you need steroids.

• Monitor your blood glucose levels at least 4 times a day.

• If you develop abdominal pain, nausea and vomiting, stop the medication immediately and seek medical help.

**Insulin:** If you are on insulin, you may need to adjust your dose.

If you are on insulin please only take as directed by your health care professional using the device given to you. Insulin should never be withdrawn from a cartridge or pen using a needle and syringe.

(See chart page 9 for managing Type 2 diabetes when you are ill)
Managing Type 1 diabetes when you are ill

Urine ketones present
More than 1.5mmol/L on blood ketone meter
Sip sugar free liquids at least 100ml/hr
Eat as normal if possible, if not see suggested meal replacements
Test blood glucose level and ketone 2 hourly

<table>
<thead>
<tr>
<th>Urine ketone + to ++</th>
<th>Urine ketone +++ to ++++</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood ketone 1.5-3mmol/L</td>
<td>Blood ketone 3mmol/L</td>
</tr>
</tbody>
</table>

If on rapid acting insulin give 10% of TDD every 2 hours and basal as normal
If on a mix or basal insulin only give 10% extra at each mealtime. At least 4 hours apart
If on rapid acting insulin give 20% TDD every 2 hours and basal as normal
If on mix or basal insulin only give 20% extra at each mealtime. At least 4 hours apart

CALCULATE TOTAL DAILY DOSE (TDD)

Add up all the insulin you have taken in the last 24 hours then calculate 10% or 20% of your total daily dose. See chart

<table>
<thead>
<tr>
<th>TDD</th>
<th>10%</th>
<th>20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 20 units</td>
<td>2 units</td>
<td>4 units</td>
</tr>
<tr>
<td>Up to 30 units</td>
<td>3 units</td>
<td>6 units</td>
</tr>
<tr>
<td>Up to 40 units</td>
<td>4 units</td>
<td>8 units</td>
</tr>
</tbody>
</table>

Managing Type 2 diabetes when you are ill

Acute illness such as diarrhoea and vomiting can be associated with dehydration, being unable to take usual diabetes tablets and increased glucose levels.

Rest, symptoms and eating and drinking: Advice as for Type 1 diabetes.

Tablets: You should take your tablets and normal dosage providing your carbohydrate intake continues in solid or liquid form. It is recommended that you check your blood glucose levels at least 4 hourly.

- If you are taking metformin you should be cautious of continuing with this medication during periods of dehydration or acute illness. It is advised that you should stop metformin if you are vomiting and / or have diarrhoea.
- Continue to take other tablets for diabetes such as Gliclazide / Glimepiride even if not eating but be aware that they may increase the risk of your blood sugar level dropping too low (hypo) so test your blood glucose levels to make sure your readings are not less than 4 mmol/L.
- If you are taking Dapagliflozin / Canagliflozin / Empagliflozin (SGLT2 Inhibitors) and you are vomiting or have diarrhoea, you should stop the medication. Only restart medication once you are fully recovered or asked to do by your GP / Doctor.