Managing your insulin doses during illness if you have type 1 or type 2 diabetes

**Type 2 diabetes?**

- Test blood glucose
  - Blood glucose less than 11 mmol/L
    - Take your insulin as normal. Take carbohydrates as a meal replacement and sip sugar-free liquids (at least 100 mL/hour if you are able)
  - Blood glucose more than 17 mmol/L
    - Add 2 extra units to each dose
  - More than 22 mmol/L
    - Add 6 extra units to each dose

**Type 1 diabetes?**

- Feeling unwell?
  - Test blood glucose and ketones
    - Blood glucose more than 11 mmol/L and ketones present (more than 1.5 mmol/L on blood ketone meter or ++/+ on urine ketones)
      - Blood glucose less than 11 mmol/L and no ketones
        - Take your insulin as normal. Take carbohydrates as a meal replacement and sip sugar-free liquids (at least 100 mL/hour if you are able)
    - Blood glucose more than 11 mmol/L and either no ketones or trace urine ketones (less than 1.5 mmol/L on blood ketone meter)
      - Take carbohydrates as a meal replacement and sip sugar-free liquids (at least 100 mL/hour if you are able)

**Insulin-treated person with diabetes**

- Test blood glucose
  - Blood glucose less than 11 mmol/L
    - Take your insulin as normal.
  - Blood glucose more than 11 mmol/L
    - Add 2 extra units to each dose
  - More than 17 mmol/L
    - Add 4 extra units to each dose

*Take your prescribed insulin as above. Once you have given the initial increased dose contact your GP or Diabetes Specialist Nurse for advice if you still feel unsure about adjusting your insulin doses. All adjustments are incremental and should be reduced gradually as the illness subsides.

**NB:** This algorithm has been adapted from Insulin self-adjustment advice. The Intermediate Diabetes Service, Enfield Community Services, BEH-MHT, 2012.

**Feeling unwell?**

- Test blood glucose level every 4 hours
  - Yes – repeat process
  - Blood glucose more than 11 mmol/L
    - Test blood glucose level and blood/urine ketones every 4 hours
    - Blood glucose more than 11 mmol/L and ketones present?
      - No
        - As your illness resolves, adjust your insulin dose back to normal
      - Yes – repeat process
    - Blood glucose more than 11 mmol/L and ketones present?
      - No
        - As your illness resolves, adjust your insulin dose back to normal
      - Yes – repeat process
  - Blood glucose less than 11 mmol/L
    - Test blood glucose level and blood/urine ketones every 2 hours
    - No
      - As your illness resolves, adjust your insulin dose back to normal
      - Yes – repeat process

**Urine ketones**

- +/+ (more than 1.5 mmol/L on blood ketone meter or ++/+ on urine ketones)
  - Urine ketones ++++ to ++++
    - (more than 3 mmol/L on blood ketone meter)

**Blood glucose**

- 11–17 mmol/L
  - Add 0 extra units to each dose
- 17–22 mmol/L
  - Add 2 extra units to each dose
- More than 22 mmol/L
  - Add 6 extra units to each dose

*Take your prescribed insulin as above. Once you have given the initial increased dose contact your GP or Diabetes Specialist Nurse for advice if you still feel unsure about adjusting your insulin doses. All adjustments are incremental and should be reduced gradually as the illness subsides.

**NB:** This algorithm has been adapted from Insulin self-adjustment advice. The Intermediate Diabetes Service, Enfield Community Services, BEH-MHT, 2012.

**Managing your insulin doses during illness if you have type 1 or type 2 diabetes**

- How illness affects your blood glucose levels
- Monitoring your diabetes
- Managing your medication
- What to eat and drink
- When to seek help

**If you start vomiting, are unable to keep fluids down or are unable to control your blood glucose or ketone levels, you must seek urgent medical advice.**

**DO NOT STOP TAKING YOUR INSULIN EVEN IF YOU ARE NOT ABLE TO EAT**

**This leaflet was generated independently by TREND UK in conjunction with SB Communications Group. The BMS/AZ Alliance has supported the printing and distribution of this leaflet with no input to the content.**
How does illness affect your blood glucose?

- When you are ill, or have an infection or a virus such as a cold, your blood glucose levels may rise in response to this, even if you are not eating.
- This may make you feel thirsty and pass urine more frequently, which can make you dehydrated. You may therefore need to increase the dose of your diabetes medication to combat this.
- If you have type 1 diabetes, your body can produce a substance called ketones when you are unwell, which can cause a serious condition called diabetic ketoacidosis.
- It is possible to manage your diabetes during illness effectively and keep your blood glucose levels down by following the simple advice given in this leaflet.

**DO NOT STOP TAKING YOUR INSULIN**

General guidance for people with diabetes

- Try to drink at least 4 to 6 pints (2.5 to 3.5 L) of sugar-free fluid in 24 hours to prevent becoming dehydrated.
- Avoid strenuous exercise.
- Treat symptoms such as a high temperature or a cough with basic medicines such as painkillers and cough medicines. These do not have to be sugar-free varieties, as they are taken in small quantities.
- See your GP if you think you have an infection, as you may need antibiotics.
- Test your blood or urine glucose levels, checking them at least four times a day.
- If you are on insulin and have been taught how to adjust, increase or decrease your doses accordingly, see the flowchart on the back page.
- Seek medical help if your readings remain higher than usual, you feel unwell and you are not sure what to do.

**Meal replacement suggestions**

Try to eat as normal but if you cannot manage your usual meals, replace these with light and easily digested foods such as soups and milky puddings. See the table below for a list of alternative food options.

<table>
<thead>
<tr>
<th>Type of food alternative</th>
<th>Amount</th>
<th>Call your GP, diabetes specialist nurse or healthcare professional for immediate help:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lucozade™ Energy</td>
<td>50 mL</td>
<td>If you are pregnant</td>
</tr>
<tr>
<td>Fruit juice*</td>
<td>100 mL</td>
<td>If you have type 1 diabetes and are taking insulin and have positive ketones and do not know how to adjust your insulin to manage these</td>
</tr>
<tr>
<td>Cola (NOT diet)*</td>
<td>100 mL</td>
<td>If, despite taking the advice in this leaflet, your symptoms are getting worse</td>
</tr>
<tr>
<td>Lemonade (NOT diet)*</td>
<td>150–200 mL 5–7 fl oz</td>
<td>If your blood glucose levels are higher than usual, you may need to increase your insulin (see overleaf). Contact your GP or Diabetes Nurse if you are not sure how to do this!</td>
</tr>
<tr>
<td>Milk</td>
<td>200 mL</td>
<td>If your blood glucose levels are lower than usual (because you are eating less than usual) you may need to reduce your insulin dose!</td>
</tr>
<tr>
<td>Soup*</td>
<td>200 mL</td>
<td>If you develop abdominal pain, nausea and vomiting, stop the medication immediately and seek medical attention</td>
</tr>
<tr>
<td>Ice cream*</td>
<td>50 g</td>
<td>If you have type 2 diabetes and are taking diabetes medication:</td>
</tr>
<tr>
<td>Drinking chocolate*</td>
<td>–</td>
<td>Continue to take your tablets even if you are not eating</td>
</tr>
<tr>
<td>Ovaltine® or Horlicks®</td>
<td>–</td>
<td>If you are taking metformin and you are vomiting or have diarrhoea, you should stop this medication</td>
</tr>
</tbody>
</table>

* Sugar quantities may vary according to brand.

**Further information**

- Diabetes UK: 0845 120 2960
- Diabetes UK: www.diabetes.org.uk

References