



# Managing your Type 1 diabetes

Sick day advice for adults



Being unwell can make your diabetes management more difficult so you need to know what to do to keep your glucose (sugar) and ketone levels as close to target as possible.

You'll need to know how to manage your food and drink intake and taking your insulin (or other diabetes medicines). Always tell the healthcare professionals treating you that you have diabetes.

Be prepared and keep a sick day tool kit: This should include a meter and strips which can check for glucose and ketones, hypo treatments, insulin, snacks, drinks and a copy of your sick day rules. Check regularly to make sure your test strips and glucagon are in date.

This is a general information leaflet. Please contact your diabetes team or GP if you are unsure what to do. If you are very unwell seek urgent medical help.

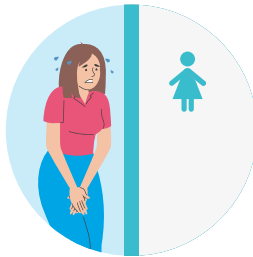
## How being unwell can affect your diabetes

Illness and infections, as well as other forms of stress, can raise your glucose levels, even if you are eating less than usual. People who don't have diabetes just produce more insulin to cope with this. When people living with diabetes are unwell, their bodies react by releasing hormones to fight the illness which can cause blood glucose and ketone levels to rise.

### Common Symptoms of high blood glucose levels:



Thirst



Passing More Urine  
Than Usual



Tiredness

## Looking after yourself

**Follow the advice in this leaflet.** You can contact your GP or diabetes team who will help you if you have any queries or if you are unsure about what to do.



### Check your blood glucose levels:

- You may notice that when you are unwell your readings are higher than usual. Check your glucose levels more often when you are unwell, usually every 2 to 4 hours. Your ideal target range for your blood glucose will have been agreed with you and your diabetes team. These targets may change when you are unwell. For most people it is normal to have blood glucose between 4-12mmol/L when they are unwell.
- Sometimes your glucose levels can go high. If this happens and if you have ketones, you may need to increase your insulin doses. Please follow the instructions in tables 1 and 2 to help you manage this.
- In some illnesses such as vomiting or diarrhoea blood glucose levels can drop too low (less than 4mmol/L) when you are taking insulin. If this happens see table 3 on how to manage hypoglycaemia.

### Check your blood ketone levels

- Ketones are a type of chemical that your liver produces when it breaks down fats. Your body uses ketones for energy usually during fasting, long periods of exercise, or when you don't eat many carbohydrates. You can have low levels of ketones in your blood without it being a problem.
- However when you are unwell high levels of ketones in your blood can develop and lead to something called diabetic ketoacidosis (DKA). This can be life-threatening. You can tell if you have high levels of ketones in your blood by checking for them with your ketone meter.

## Symptoms of DKA:



Abdominal Pain



Fast breathing



Feeling or being sick



ketone levels  $>3\text{mmol/L}$



Your breath smells of pear drops or acetone



Sweet or metallic taste in your mouth

### Stay hydrated:

Drink at least half a cup (100mls) of water or sugar-free fluids every hour. High blood glucose levels can make you dehydrated and more unwell. Dehydration can be made worse if you have a high temperature, vomiting and diarrhoea.

### Rest:

Avoid too much exercise as this can increase your blood glucose and ketone levels even more.

### Treat symptoms or the underlying cause of your illness:

It may be possible to treat symptoms of minor illness with over-the-counter medicines. Ask your pharmacist or GP for advice.

### Seek medical attention if:

- you are unable to manage your blood glucose
- your ketones are greater than  $1.5\text{mmol/L}$
- you feel very unwell or are not recovering as expected.

Some conditions may require treatment with steroids. This can increase your blood glucose further and changes to your diabetes medicine are often needed while on the steroid treatment. Your GP or diabetes team will advise you about this. **Do not stop your steroids until you have been told to do so.**

**When you are unwell your body requires a lot of energy to recover.**

- **Do not fast** - try to eat normally if you can
- **If you are unable to eat normal meals** eat light and **easily digested** foods such as:



**Fruit juice 100mls**



**Milk 200mls**



**1 Small yoghurt**



**1 slice of toast**



**2 plain biscuits**



**Bowl of soup**

***Each is equal to approximately 10grams of carbohydrate***

# Table 1

## Managing your insulin dose when your blood ketones are less than 1.5 mmol/L

Glucose more than 11 mmol/L and/or you feel unwell, either with no ketones or blood ketones less than 1.5 mmol/L (negative or trace ketones)

Sip sugar-free fluids, at least 100 ml every hour. Eat as normal if possible. If not, see meal replacement suggestions (page 5).  
**You need food containing carbohydrates (carbs), insulin and fluids to avoid dehydration and prevent diabetic ketoacidosis**

Test glucose and blood ketones **every 4 to 6 hours** including during the night

Aim to take your usual insulin dose. However, if your glucose is above 11 mmol/L take additional insulin as below

Glucose	Insulin Dose
11 to 17 mmol/L	Add <b>2 extra</b> units to each dose
17 to 22 mmol/L	Add <b>4 extra</b> units to each dose
More than 22 mmol/L	Add <b>6 extra</b> units to each dose

**Call your GP or diabetes team if your glucose still remains higher than normal**



If you start vomiting, are unable to keep fluids down or are unable to manage your glucose or ketone levels, you must **seek urgent medical advice. NEVER STOP TAKING YOUR LONG ACTING INSULIN EVEN IF YOU ARE UNABLE TO EAT.**

## Table 2

### Managing your insulin dose when your blood ketones are 1.5mmol/L or higher

Glucose more than 11 mmol/L and/or you feel unwell, either with blood ketones 1.5 mmol/L or higher (+ or more of urine ketones)

Sip sugar-free fluids, at least 100 ml every hour. Eat as normal if possible. If not, see meal replacement suggestions (page 5). **You need food containing carbohydrates (carbs), insulin and fluids to avoid dehydration and prevent diabetic ketoacidosis.**

1.3 to 3 mmol/L on blood ketone meter (+ to ++ urine ketones)

More than 3 mmol/L on blood ketones meter (+++ to ++++ urines ketones)

Total daily insulin dose: <b>TDD</b> to calculate your total daily dose please add your dose of rapid and long acting insulins for one day together or add your mixed insulin doses together	Give an additional <b>10%</b> of your TDD as rapid-acting or mixed insulin every 2 hours	Give an additional <b>20%</b> of your TDD as rapid-acting or mixed insulin every 2 hours
Up to 14 Units	1 Unit	2 Units
15 to 24 Units	2 Units	4 Units
25 to 34 Units	3 Units	6 Units
35 to 44 Units	4 Units	8 Units
45 to 54 Units	5 Units	10 Units

**If you take more than 54 units or if you are unsure how to alter your dose, contact your diabetes team or GP**

Test glucose and blood ketones **every 2 hours** including during the night

Glucose more than 11 mmol/L and ketones present?

**YES** | Repeat the Process

**NO** | As your illness resolves adjust your insulin dose back to normal



If you start vomiting, are unable to keep fluids down or are unable to manage your glucose or ketone levels, you must **seek urgent medical advice. NEVER STOP TAKING YOUR LONG ACTING INSULIN EVEN IF YOU ARE UNABLE TO EAT.**

## Table 3

How to treat a "Hypo" (a blood glucose level less than 4mmol/L)

### Step 1

Take one of the following: (15 grams of carbohydrate)

- 5 glucose tablets or
- 60mls of glucose drink "Lift®" (available in pharmacies) or
- A sugary drink:
  - 170mls Lucozade® Original
  - 150mls non-diet cola/ juice

Recheck your blood glucose after 15 minutes

Blood glucose is still  
less than 4mmol/L

Repeat Step 1

Blood glucose is  
greater than 4mmol/L

### Step 2

Once blood glucose level is greater than 4mmol/L, have a snack:

- 1 slice of toast or
- 2 plain biscuits or
- One piece of medium-sized fruit or
- 250mls milk or
- Next meal if due within 30 minutes

Recheck your blood glucose after 20 minutes

**Seek medical attention if low blood glucose levels continue despite treatment** (i.e. using step 1 x 3 times) and/or you are unable to stay hydrated or take carbohydrates due to vomiting.

**Make sure you have a supply of Glucagon available and someone who knows how to use it.**

**Glucagon should be given if you are unable to swallow and/or have lost consciousness.**



## What if your condition gets worse despite following the advice in this leaflet?



If you are vomiting, if you become breathless or drowsy, if you have stomach pains or your condition is getting worse you will need **URGENT MEDICAL ATTENTION**. Attend your local Emergency Department or **CALL 999 or 112 immediately**.

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## References

Insulin adjustment tables and meal replacement information reproduced with permission from Type 1 diabetes: what to do when you are ill. **TREND UK 2020**.

[https://trenddiabetes.online/wp-content/uploads/2020/03/A5\\_T1Illness\\_TREND\\_FINAL.pdf](https://trenddiabetes.online/wp-content/uploads/2020/03/A5_T1Illness_TREND_FINAL.pdf)

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