

# Hyperglycaemia and sick day management for adults with type 1 diabetes

Having a sick day management plan to manage blood glucose levels (BGLs) is important to help prevent diabetic ketoacidosis (DKA) and hypoglycaemia (low BGLs).


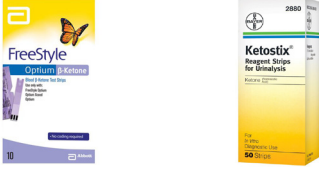



This guide has been developed for Multiple Daily Injections (MDI) and **NOT** Insulin Pump Therapy. It should be used in consultation with your health care team.

## When to action your sick day management plan

- If you are unwell or have an infection even if your BGL is normal.
- When BGLs are greater than 15mmol/L for 6 hours or more, even if you feel OK.
- When you have ketones in your blood or urine.
- Based on previous experience (e.g. infection, steroid medication).

## Key steps in a sick day management plan

The following steps should be followed:

<p>1. Test your BGL as per sick day and insulin adjustment plan (pages 2–4).</p>	
<p>2. Test your blood or urine ketone levels as per sick day and insulin adjustment plan (pages 2–4).</p>	
<p>3. Continue to take your insulin. Extra insulin may be required. This is dependant on your blood glucose and ketone level. See sick day and insulin adjustment plan (pages 2–4).</p>	
<p>4. Continue to eat and drink if possible. Refer to fluid options (Page 4).</p>	
<p>5. Seek urgent medical attention if you remain unwell or are unable to manage your diabetes.</p>	

### **BGLS less than 4.0mmol/L and**

#### **Blood ketones less than 1.0mmol/L (urine ketones negative)**

- Treat hypoglycaemia as per usual treatment
- Recheck BGL in 15 minutes
- If unable to eat or drink, phone 000 and give intramuscular glucagon injection (if available)
- Recheck BGL in 1 hour
- Recheck blood ketones in 2 hours

#### **Blood ketones 1.0–1.4mmol/L (urine ketones small)**

- Treat hypoglycaemia as per usual treatment
- Recheck BGL in 15 minutes
- If unable to eat or drink, phone 000 and give intramuscular glucagon injection (if available)
- Recheck BGL in 1 hour
- Recheck blood ketones in 2 hours

#### **Blood ketones more than 1.5mmol/L (urine ketones moderate/large)**

- Treat hypoglycaemia as per usual treatment
- Recheck BGL in 15 minutes
- If unable to eat or drink, phone 000 and give intramuscular glucagon injection (if available)
- Recheck BGL and ketones hourly until normalised

#### **Blood ketones more than 3.0mmol/L**

- Seek urgent medical attention

#### **Important**

Seek urgent medical attention if BGLs do not rise or ketones remain present.

### **BGLs 4.1–8.0mmol/L and**

#### **Blood ketones less than 1.0mmol/L (urine ketones negative)**

- Continue usual insulin doses
- Drink fluids containing 15–20 grams carbohydrate (see page 4)
- Recheck BGL and ketones in 2 hours

#### **Blood ketones 1.0–1.4mmol/L (urine ketones small)**

- Continue usual insulin doses
- Drink fluids containing 15–20 grams carbohydrate (see page 4)
- Recheck BGL and ketones in 2 hours

#### **Blood ketones more than 1.5mmol/L (urine ketones moderate/large)**

- Take 5% extra insulin
- Drink fluids containing 15–20 grams carbohydrate (see page 4)
- Recheck BGL and ketones in 2 hours

#### **Blood ketone more than 3.0mmol/L**

- Seek urgent medical attention

#### **Important**

Seek urgent medical attention if BGLs or ketones continue to increase after two extra doses of insulin.

### **BGL 8.1–15.0mmol/L and**

#### **Blood ketones less than 1.0mmol/L (urine ketones negative)**

- If ketones elevated for more than 2 hours, consider 5% extra insulin
- Drink fluids containing 15–20 grams carbohydrate (see page 4)
- Administer usual insulin for carbohydrates
- Recheck BGL and ketones in 2 hours

#### **Blood ketones 1.0–1.4mmol/L (urine ketones small)**

- If ketones elevated for more than 2 hours, consider 5–10% extra insulin
- Drink fluids containing 15–20 grams carbohydrate (see page 4)
- Administer usual insulin for carbohydrates
- Recheck BGL and ketones in 2 hours

#### **Blood ketones more than 1.5mmol/L (urine ketones moderate/large)**

- If ketones elevated for more than 2 hours, consider 10% supplemental insulin
- Drink fluids containing 15–20 grams carbohydrate (see page 4)
- Administer usual insulin for carbohydrates
- Recheck BGL and ketones in 2 hours

#### **Blood ketones more than 3mmol/L**

- Seek urgent medical attention

#### **Important**

Seek urgent medical attention if BGLs or ketones continue to increase after 2 extra doses of insulin.

### **BGL greater than 15mmol/L and**

#### **Blood ketone less than 1.0mmol/L (urine ketone negative)**

- Take 5–10% extra insulin dose
- Drink carbohydrate free fluids OR drink fluids containing carbohydrate and administer insulin for carbohydrate
- Recheck BGL and ketones in 2 hours

#### **Blood ketone 1.0 - 1.4mmol/L (urine ketone small)**

- Take 10–15% extra insulin dose
- Drink carbohydrate free fluids OR drink fluids containing carbohydrate and administer insulin for carbohydrate
- Recheck BGL and ketones in 2 hours

#### **Blood ketone more than 1.5mmol/L (urine ketone moderate/large)**

- Take 15–20% extra insulin dose
- Drink carbohydrate free fluids OR drink fluids containing carbohydrate and administer insulin for carbohydrate
- Recheck BGL and ketones in 1 hour

#### **Blood ketone more than 3mmol/L**

- Seek urgent medical attention

#### **Important**

Seek urgent medical attention if BGLs or ketones continue to increase after 2 extra doses of insulin or unable to decrease BGL after two extra doses of insulin.

## Calculation of extra insulin

The total daily dose (TDD) is the sum of your long acting and rapid acting doses across the day. Extra rapid acting insulin doses are based on a percentage of your TDD.

	Morning	Lunch	Dinner	Bed
Rapid acting insulin				
Long acting insulin				
Total Daily Dose = _____ units				
Percentage based on TDD	5% _____ units		10% _____ units	
	15% _____ units		20% _____ units	

## Nutrition tips

- To avoid dehydration, keep drinking and eating if possible.
- Aim for 125mls-250mls of fluid per hour.

### BGLs less than 15mmol/L

Include carbohydrate containing fluids (15–20 grams per hour)

e.g. fruit juice, soft drink, milk, sports drinks



100mls



150mls



300mls



250mls

### BGLs more than 15mmol/L

Include carbohydrate free fluids (125–250 mls per hour)

e.g. water, diet soft drink, Powerade Zero, diet cordial, diet jelly, broth



This fact sheet has been adapted from ADEA Sick Day Management of Adults with Type 1 Diabetes Consumer Resource, Available from: <https://www.adea.com.au/wp-content/uploads/2015/12/sick-day-booklet-type-1-single-page-final.pdf>.