

# Hyperglycaemia & Sick Day Rules: Hybrid Closed Loop

Glucose 14 mmol/L or higher for more than 2 hours, or feeling unwell?

**\*If you are vomiting and unable to keep fluids down, ketones are more than 3.0mmol/L, and you can't keep glucose in target, there is a high risk of DKA so you must go to hospital as an emergency.**

Check blood glucose and ketones

**1: If blood ketones are less than 0.6mmol/L**

**2: If blood ketones are between 0.6-1.5mmol/L**

**3: If blood ketones are above 1.5mmol/L\***

**Stay in automated mode**

Auto mode will aim to bring glucose levels down by increasing basal/giving corrections.  
Check sensor glucose matches blood glucose.

Give correction bolus **via pump/handset** in addition to insulin required for food.

Recheck blood glucose and ketones in **2 hours**.

**Exit automated mode to use pump in manual mode**

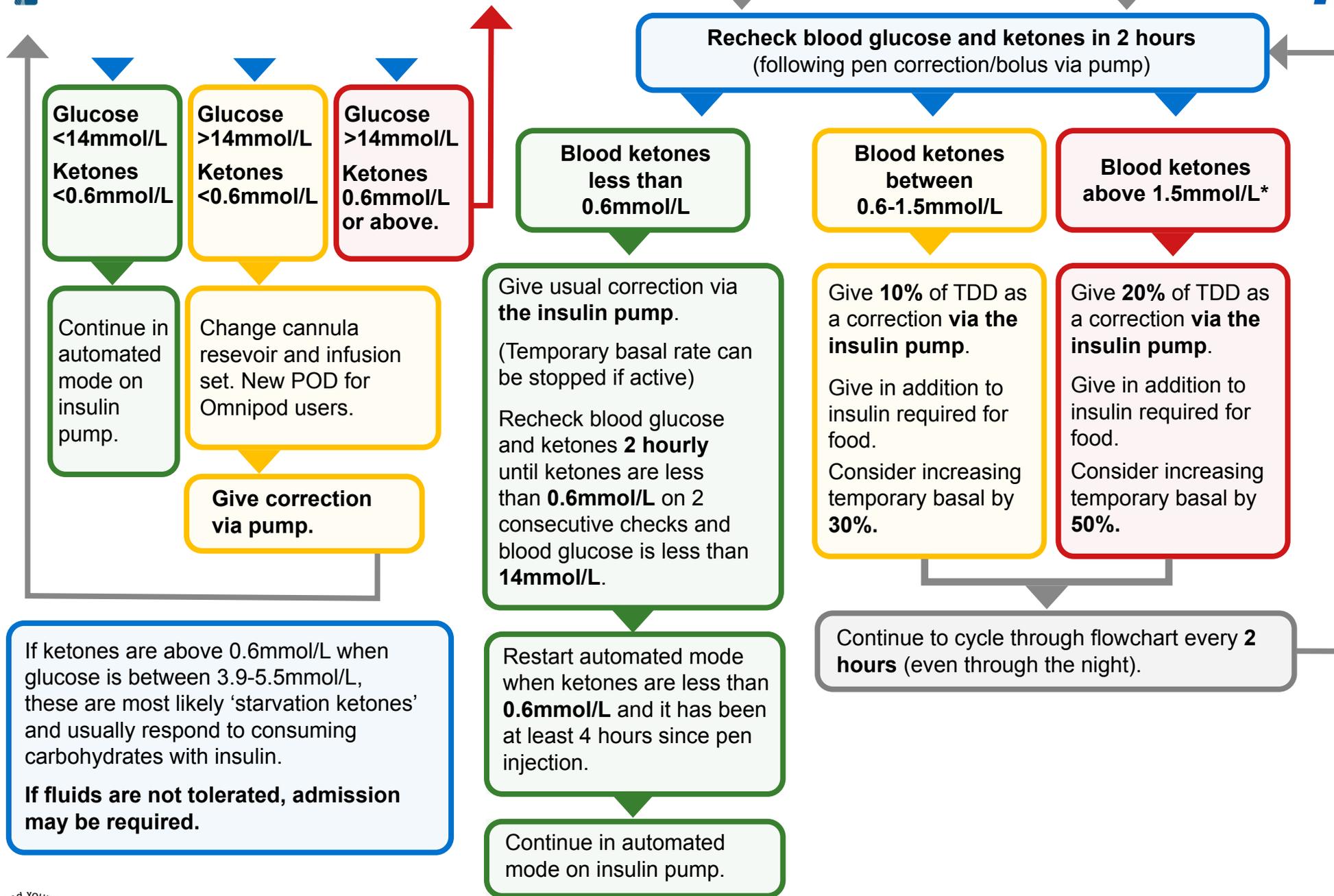
**Calculate (look up) average Total Daily Dose (TDD)**

See previous day/14 day history on pump/handset or can be found on last clinic letter.

**2: Give 10% of TDD of fast acting insulin as a correction dose via INSULIN PEN (not pump).**  
If TDD unavailable give **0.1 units/kg** of body weight as a correction dose).  
Give in addition to insulin required for food.

**3: Give 20% of TDD of fast acting insulin as a correction dose via INSULIN PEN (not pump).**  
If TDD unavailable give **0.2 units/kg** of body weight as a correction dose).  
Give in addition to insulin required for food.

**Change cannula, reservoir and infusion set. New POD for Omnipod users.**



**If you have been trying to resolve ketones and hyperglycaemia for more than 4 hours with no improvement please seek help.**

**Admission is required if:**

- ! Ketones continue rising above 1.5mmol/L despite above management.**
- ! Ketones are above 3mmol/L with vomiting or glucose above 14mmol/L. DKA risk is high.**
- ! Vomiting or can't keep fluids down.**

**The following 'Sick Day Rules' should be followed alongside the flowchart:**

### **Insulin**

- Never stop or omit insulin (doses may need to be adjusted depending on glucose and ketone levels).
- Insulin is required to switch off ketone production.
- Give fast acting insulin every 2 hours if blood glucose is above target and/or blood ketones remain above 0.6mmol/L (follow flowchart for doses).

### **Blood glucose and ketones checking**

- Check glucose and ketones more frequently in illness e.g. every 2 hours including through the night.
- Check blood ketones regardless of blood glucose level when unwell.
- Follow sick day rules advice until ketones are below 0.6mmol/L for 2 consecutive checks.

### **Fluids**

- If refusing to eat, sugary fluids can be given with insulin.
- Keep well hydrated by drinking plenty of sugar-free fluids for normal or high glucose levels (e.g. at least 50mls/hr for pre-school, at least 100ml/hr for teens).
- Give insulin for fluid containing carbohydrates, unless blood glucose levels are less than 5.5mmol/L or hypo.