



## Sick day rules

### General advice for managing diabetes during intercurrent illness

#### S (Sugar)

- Blood glucose levels can rise during illness even if the person is not eating
- Advise to increase blood glucose monitoring if the person has access to it
- Diabetes medications (sulfonylureas and insulin doses) may need to be increased temporarily during illness to manage these raised glucose levels

#### I (Insulin)

- **NEVER** stop insulin or oral diabetes medications\*
- Insulin doses may need to be increased during illness, especially if ketones are present
- Specific advice for people on insulin therapy is presented overleaf

#### C (Carbohydrate)

- Ensure the person maintains hydration and carbohydrate intake
- If the person is not able to eat or is vomiting, advise to replace meals with sugary fluids
- If blood glucose levels are high, maintain fluid intake with sugar-free fluids
- If blood glucose levels are low, encourage regular intake of sugary fluids

#### K (Ketones)

- In type 1 diabetes, advise to check for ketones every 2–4 hours
- Give **extra rapid-acting insulin doses** (in addition to regular doses) based on total daily insulin dose if ketones are present – see insulin algorithm overleaf
- Advise to drink plenty of water to maintain hydration and flush through ketones

\*Metformin and SGLT2 inhibitors may need to be temporarily stopped if at risk of dehydration (see SADMAN rules below).

### SADMAN rules: There are several classes of drugs that should be temporarily stopped in conditions that could lead to complications

<b>S</b>	SGLT2 inhibitors	If taken during an acute illness that can lead to dehydration, there is an increased risk of developing euglycaemic DKA
<b>A</b>	ACE inhibitors	If taken during an acute illness that can lead to dehydration, there is an increased risk of developing AKI due to reduced renal efferent vasoconstriction
<b>D</b>	Diuretics	If taken during an acute illness that can lead to dehydration, there is an increased risk of developing AKI
<b>M</b>	Metformin	If taken during an acute illness that can lead to dehydration, there is an increased risk of developing lactic acidosis
<b>A</b>	ARBs	If taken during an acute illness that can lead to dehydration, there is an increased risk of developing AKI
<b>N</b>	NSAIDs	If taken during an acute illness that can lead to dehydration, there is an increased risk of developing AKI due to reduced renal afferent vasodilation

Once the person is feeling better and able to eat and drink for 24–48 hours, these medications should be restarted.

#### Signs of diabetic ketoacidosis

- Excessive thirst
- Polyuria
- Dehydration
- Shortness of breath and laboured breathing
- Abdominal pain
- Leg cramps
- Nausea and vomiting
- Mental confusion and drowsiness
- Ketones can be detected on the person's breath (pear-drop smell) or in the blood or urine



**DKA occurs in type 1 diabetes and can occur in type 2 diabetes at times of severe illness or, rarely, in those on SGLT2 inhibitor therapy. It requires urgent hospital admission.**

#### Signs of hyperosmolar hyperglycaemic state

- Typically seen after several days with glucose levels consistently above 30 mmol/L
- Disorientation or confusion
- Polyuria
- Thirst and dry mouth
- Nausea
- In the later stages, the person becomes drowsy and gradually loses consciousness



**HHS is potentially life-threatening and requires urgent admission to hospital.**

#### About this series

The aim of the "How to" series is to provide readers with a guide to clinical procedures and aspects of diabetes care that are covered in the clinic setting.

#### What and why

People with diabetes do not necessarily experience illness more often than those without; however, if the diabetes is not managed well during illness it can escalate and result in more serious conditions, such as diabetic ketoacidosis, hyperosmolar hyperglycaemic state and acute kidney injury, which will require emergency hospital admission. It is, therefore, vital that the right advice is given to manage the initial illness.

The aims of managing a person with diabetes during intercurrent illness are to:

- Manage blood glucose levels
- Ensure adequate calorie intake and hydration with fluid replacement
- Test for and manage (if present) ketones
- Recognise when further medical attention is required

#### Conditions that should trigger advice

Any intercurrent illness can cause glucose levels to rise. The following list of such illnesses is not exhaustive:

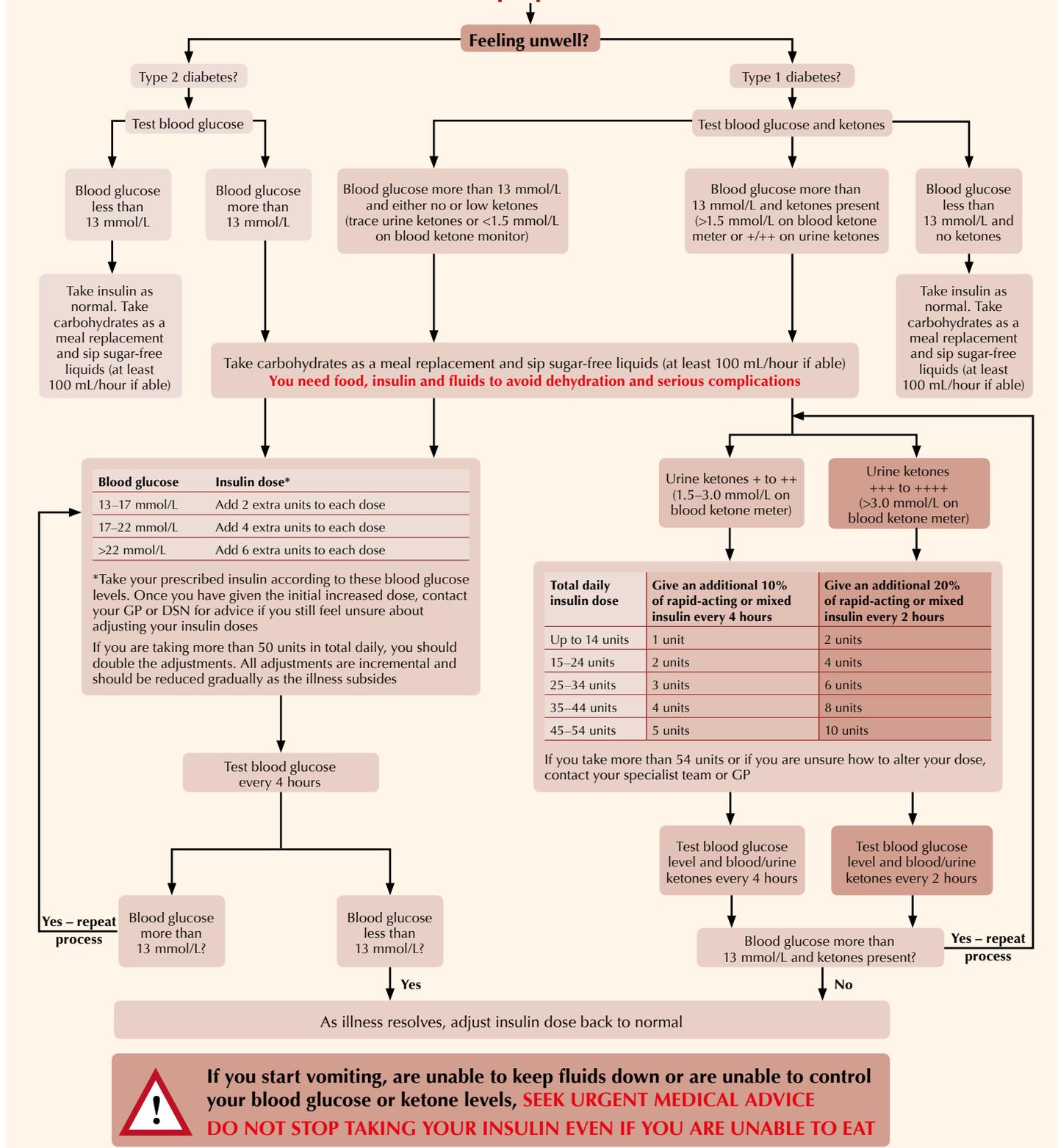
- The common cold
- Influenza
- Diarrhoea and vomiting
- Urinary tract infection
- Chest infection
- Pneumonia
- Abscess
- Injury (e.g. fracture)

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### Advice for people on insulin



#### Useful reading and leaflets

- NICE CG169 – Acute kidney injury: prevention, detection and management
- TREND-UK – Managing diabetes during intercurrent illness in the community
- “Sick day rules” in patients at risk of acute kidney injury: an interim position statement from the Think Kidneys Board

#### Abbreviations

ACE=angiotensin-converting enzyme; AKI=acute kidney injury; ARB=angiotensin receptor blocker; DKA=diabetic ketoacidosis; HHS=hyperosmolar hyperglycaemic state; NSAID=non-steroidal anti-inflammatory drug; SGLT2=sodium–glucose cotransporter 2