

You are at risk of dehydration if you have any of any of the following:

- Fever (Coronavirus)
- Vomiting
- Diarrhoea
- Excessive exposure to heat & humidity

General advice for managing diabetes during any 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 eg gliclazide/Bilxona MR and insulin doses) may need temporarily increased during illness to manage raised glucose levels

I (Insulin):

- NEVER stop insulin or oral diabetes medications, except see SADMAN below. Check blood glucose (sugar) more often.
- 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, aiming for 100 ml/hour. Consider Dioralyte. clear soups, water. Limit caffeine from coffee and tea.
- If blood glucose levels are low, encourage regular intake of sugary fluids, eg. milk, pure apple/orange, fruit yoghurt, ice cream, aiming for 100 ml/hour till glucose normal.

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 ketone

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:

- Coronavirus
- The common cold
- Influenza (flu)
- Diarrhoea and vomiting
- Urinary tract infection
- Chest infection
- Pneumonia (bad chest infection)
- abscess
- Injury (e.g. fracture)

SADMAN rules: If unwell, there are several classes of drugs that should be temporarily stopped that could lead to complications if you continue to take them.

SGLT2 inhibitors: Taken during an acute illness can lead to dehydration & an increased risk of developing DKA with normal blood glucose (sugar), e.g. Canagliflozin (Invokana), Dapagliflozin (Forxiga®), Empagliflozin (Jardiance)

ACE Inhibitors: Taken during an acute illness can lead to dehydration & increased risk of developing acute kidney injury. e.g. Enalapril, Fosinopril, Lisinopril (Zestril), Perindopril (Coversyl), Quinapril (Accupril), Ramipril, Trandolapril

Diuretics: Taken during an acute illness can lead to dehydration & increased risk of developing acute kidney injury. eg. Chlorthalidone, Furosemide, Hydrochlorothiazide (eg Zestoretic, Coversyl plus), Indapamide, Metolazone, Spironolactone.

Metformin: Taken during an acute illness can lead to dehydration, with an increased risk of developing high lactic levels, eg. Metformin as Glucophage or Sukkarto

ARBs: Taken during an acute illness can lead to dehydration & increased risk of developing acute kidney injury. e.g. Candesartan, Irbesartan, Losartan (Cozaar), Olmesartan (Olmotec), Telmisartan (Micardis), Valsartan (Diovan)

NSAIDs : Taken during an acute illness can lead to dehydration & increased risk of developing acute kidney injury. e.g. Ibuprofen, Celecoxib (Celebrex), Diclofenac (Voltarol), Naproxen

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 (DKA)

- Excessive thirst
- Polyuria (increased frequency to pass urine)
- Dehydration
- Shortness of breath and laboured breathing
- Abdominal pain
- Leg cramps
- Nausea and vomiting
- Mental confusion and drowsiness

Ketones can be smelt on the person's breath (pear-drop smell) & tested for in blood & 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 (HHS)

- Typically seen after several days with glucose levels consistently above 30 mmol/L
- Disorientation or confusion
- Polyuria (increased frequency to pass urine)
- 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.

Contact your Diabetes Care Team Mon-Fri 9-5 if...

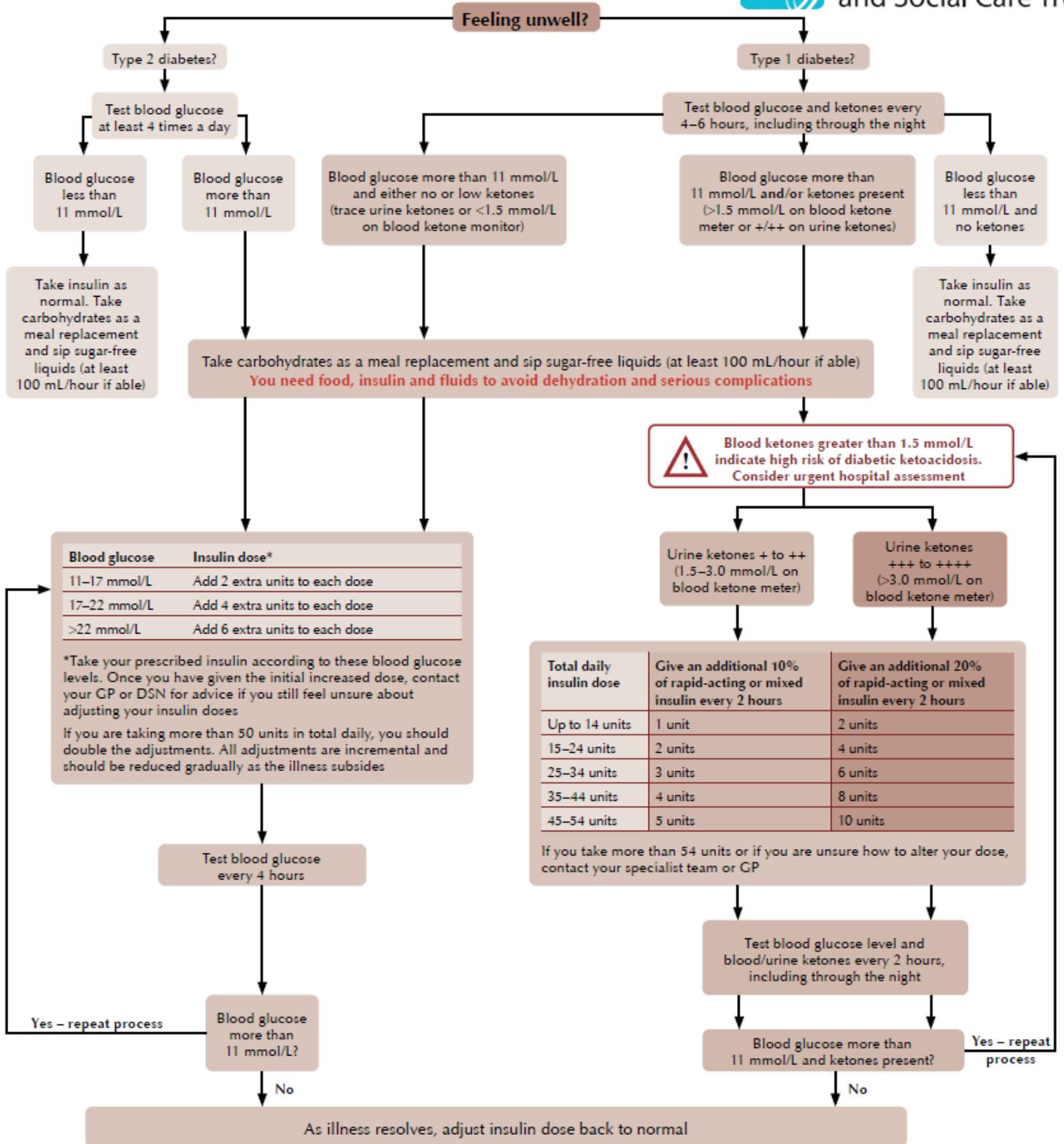
- you're unsure how to adjust insulin
- your ketones are moderate to high

Newtownabbey/Carrickfergus/Larne 028 9055222
 Antrim/Ballymena areas 028 25635287
 Mid Ulster area 028 79547487
 Causeway area 028 70346265

When to seek Advice

If you think you have Coronavirus & need urgent medical help use NHS 111 online or call 111 or call 999 for life-threatening emergencies only.

- If you cannot drink enough fluids
- If you have been told to check your ketones and they are moderate to high
- If you have any of the following that are not getting better: vomiting, diarrhea, stomach pain, frequent urination, extreme thirst, weakness, difficulty breathing or fever.



| Blood glucose | Insulin dose* |
|---------------|--------------------------------|
| 11-17 mmol/L | Add 2 extra units to each dose |
| 17-22 mmol/L | Add 4 extra units to each dose |
| >22 mmol/L | Add 6 extra units to each dose |

*Take your prescribed insulin according to these blood glucose levels. Once you have given the initial increased dose, contact your GP or DSN for advice if you still feel unsure about adjusting your insulin doses

If you are taking more than 50 units in total daily, you should double the adjustments. All adjustments are incremental and should be reduced gradually as the illness subsides

! If you start vomiting, are unable to keep fluids down or are unable to control your blood glucose or ketone levels, **SEEK URGENT MEDICAL ADVICE**
DO NOT STOP TAKING YOUR INSULIN EVEN IF YOU ARE UNABLE TO EAT

How to calculate Total Daily Insulin TDI Dose:

2 daily injections:

- Novomix30 20 units (pre-breakfast) AND
- Novomix30 14 units (pre-evening meal) =

total TDI 34 units

4 daily injections:

- Novorapid 8 units (pre-breakfast) AND
- Novorapid 8 units (pre-lunch) AND
- Novorapid 8 units (pre-evening meal) AND
- Lantus 12 units (bedtime) =

total TDI 36 units

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