

Discharge package for type 1 diabetes from ED/AMU

Diabetes UK has useful resources for information on how to manage diabetes. We have created a list of links to advice on managing diabetes at home with the support of family, friends, neighbours.

If you are unable to access the links, please ask a member of your support network to help with this.

What is diabetes?

Diabetes is a serious condition where your blood glucose level is too high. There are two main types, type 1 and type 2. They are different conditions, but they are both serious. There are some other rarer types of diabetes too.

When you have type 1 diabetes, you cannot make any insulin at all. If you have type 2 diabetes the insulin you make either does not work effectively, or you cannot produce enough of it.

In both types of diabetes, because glucose cannot get into your cells, it begins to build up in your blood. Too much glucose in your blood causes a lot of different problems.

Over a long period of time, high glucose levels in your blood can seriously damage your heart, your eyes, your feet and your kidneys. These are known as the complications of diabetes.

But with the right treatment and care, people can live a healthy life and there is much less risk that someone will experience these complications.

Get more information on living with diabetes by following the links below:

What is Diabetes? - For patients newly diagnosed with type 1 diabetes:

<https://www.diabetes.org.uk/diabetes-the-basics>

You can also access more information and education about living well and how to manage your diabetes via the Bertie website:

<https://www.bertieonline.org.uk/home>

How to inject insulin

If you need to inject insulin, please see the guidelines below of how to do this safely.

If you would like more information you can click on the link below:

<https://www.diabetes.org.uk/guide-to-diabetes/managing-your-diabetes/treating-your-diabetes/insulin>

1. Wash and dry your hands.
2. Choose where you are going to inject – you are looking for fatty tissue so the main injection sites are your stomach (in a semi-circle under your belly button), sides of your thighs and your bum. It is vital that you choose a different spot each time – at least 1cm or half an inch from where you last injected. If not, hard lumps can appear that will stop your body absorbing and using the insulin properly.
3. Attach the needle to your pen – removing the outer and inner caps – and dial up two units of insulin. Point your pen upwards and press the plunger until insulin appears from the top of the needle. This is known as priming and helps regulate your dose by removing any air from the needle and cartridge.
4. Dial your dose and make sure the spot you are injecting is clean and dry.
5. Insert the needle at a right angle (90° angle). You might want to gently pinch the skin before injecting. Press the plunger until the dial goes back to 0.
6. Count to 10 slowly to give the insulin time to enter your body before removing the needle.
7. Throw away the needle using your needle clipper or sharps bin. Your healthcare team will tell you how to get rid of the bin safely when full.

Hypoglycaemia – symptoms and management

Diabetes UK:

<https://www.diabetes.org.uk/guide-to-diabetes/complications/hypos/having-a-hypo>

What is a 'hypo'?

- Hypos are the most common side effect of taking insulin.
- Hypos are when your blood sugar is low (usually below 4mmol/L) and they are very common when you take insulin.
- This can happen if the balance of diabetes medication you take (especially insulin), food you eat and physical activity you do sometimes is not right. Not everyone with diabetes will have hypos.
- They can be caused by taking too much insulin.
- If you are having a lot of hypos, you may be on the wrong dose of insulin and you should speak to your healthcare professional.
- A hypo can happen quickly. So it is important you know what the signs are and what to do if you are having a hypo.

Please see the flowchart below which summarises how you can manage hypoglycaemia at home.

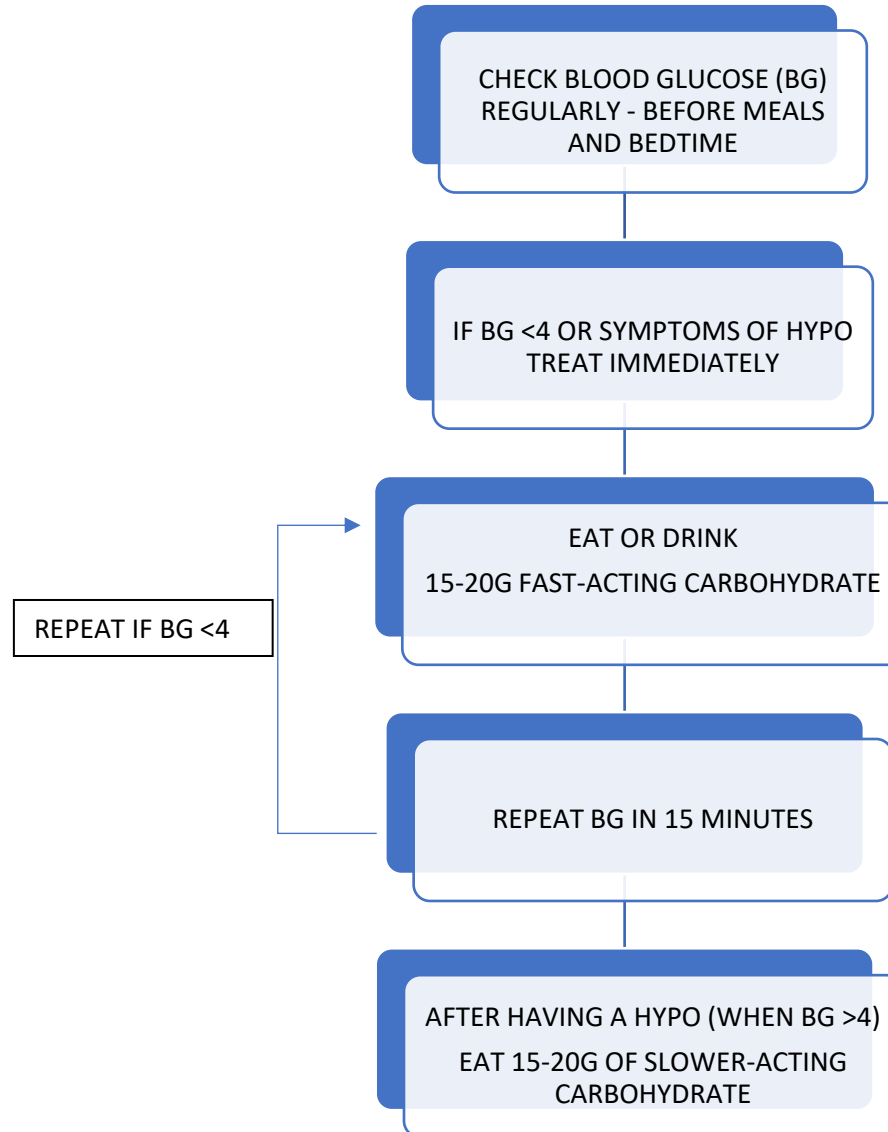
What to do when someone is having a severe hypo

It is important that your family and friends know what to do if you have a severe hypo and become unconscious. They should not try to give you any food or drink because you won't be able to swallow. They will need to help you very quickly.

They need to:

- put you into the recovery position (on your side, with your head tilted back and knees bent)
- give you a glucagon injection – if there is one and someone knows how to use it
- call an ambulance – if you do not have a glucagon injection or if you have not recovered 10 minutes after the injection.

HYPOGLYCAEMIA MANAGEMENT:



SYMPTOMS OF HYPOS:

TREMBLING + SHAKY	HEADACHE
SWEATING	LACK OF CONCENTRATION
ANXIOUS OR IRRITABLE	PALPITATIONS
GOING PALE	LIPS FEELING TINGLY
BEING HUNGRY	FEELING TEARFUL
TIREDNESS	BLURRED SIGHT

FAST ACTING CARBOHYDRATE

- three glucose or dextrose tablets
- five jelly babies
- a small glass of a sugary (non-diet) drink
- a small carton of pure fruit juice
- two tubes of a glucose gel such as GlucoGel®.

SLOWER ACTING CARBOHYDRATE

- sandwich
- piece of fruit
- bowl of cereal
- glass of milk
- Or it could be your next meal, if it's due

How to keep yourself well during period of illness

- **If you develop Coronavirus symptoms or any other illness it is likely to affect your blood sugars.**
- **While you are unwell it is VERY likely you will need to take more insulin**
- **Even if you are vomiting you must NEVER stop taking your insulin**
- Monitor your urine or blood for ketones every 2 hours
- Monitor blood sugar levels once every 2 hours
- Drink at least ½ cup (100mls) of water every hour, but you can also drink any other sugar free drinks
- Please do not fast. Try to eat some food which contains carbohydrates e.g. yoghurt, toast, ice cream and cereal
- If you are worried about other symptoms not related to your diabetes, please seek medical advice from NHS 111 in the first instance
- **You will need face to face medical attention if you are continuously vomiting for more than 4-6hrs or if your ketone levels in blood or urine are not reducing despite following sick day rules.**

Multiple daily injections (MDI) sick day rules

**Feel unwell and taking multiple daily insulin injections?
Test blood glucose and ketones**

NO KETONES
(Negative or trace on urine test; less than 1.5mmol/l on blood test)
MINOR ILLNESS

KETONES PRESENT
(More than a trace in urine test; more than 1.5mmol/L on blood test)
Blood glucose raised (usually above 13 mmol/L)
SEVERE ILLNESS

Sip sugar-free fluids (at least ½ cup / 100ml per hour)

Test blood glucose and ketones every 2-4 hours

Test blood glucose and ketones every 2 hours

Calculate total daily dose (TDD) from previous day

- Usual insulin to carbohydrate ratio if eating at your normal meal time.
- Use corrective quick acting insulin if blood glucose is raised, even if you are not eating.
- When unwell you may find you need larger bolus doses to reduce blood glucose.
- If glucose levels are persistently above target, consider an increase of 10% - 20% (or even more if required) in basal (long acting) insulin dose.

If Ketones + to ++ on urine test 1.5-3mmol/L on blood test.

Give 10% of TDD as quick acting insulin every 2 hours plus usual insulin to carbohydrate ratio if eating. You may need to increase your basal (long acting) insulin dose by 10-20%.

If Ketones +++ to ++++ over 3mmol/L on blood test

Give 20% of TDD as quick acting insulin every 2 hours, plus usual insulin to carbohydrate ratio if eating. you may need to increase your basal (long acting) insulin dose by 10-20% or more.

If you still have ketones go back to the start and repeat the process.

When no ketones are present

1. Eat/drink 10-20grams of carbohydrate. Use Carbs and Cals book or app to help with this. <https://www.carbsandcals.com/app/app>
2. Take usual meal time insulin
3. Take usual basal (long acting) insulin

If your ketones are still present after 4-6 hours and or you continue to vomit, are unable to keep fluids down, or unable to control your blood glucose or ketones you must go to the hospital as an emergency. You must not stop your basal (long acting) insulin

Calculating your total daily dose (TDD)

- If you need to calculate how much total daily dose of insulin you need to follow the sick day rules, see EXAMPLE calculations below. Each individual's total daily dose of insulin and calculations will be different, the example is a guide only.

Example 1 - if you do know your daily dose

Total of all quick acting (mealtime) insulin = 26 units
 Total of all background (long acting) insulin = 24 units
 Total daily dose = 26+24 = 50 units
 10% of total daily dose = $50 \div 10 = 5$ units
 20% of total daily dose = $50 \div 5 = 10$ units

Example 2 If you cannot calculate your daily dose please use the following chart based on your weight in kilograms

Body Weight	Ketone level (mmol/L)	
	10% of total daily dose Blood ketone 1-2.9 Urine ketone + to ++	20% of total daily dose Blood ketone 3.0 + Urine ketone +++ to ++++
40(Kg)	4 units	8 units
50(Kg)	5 units	10 units
60(Kg)	6 units	12 units
70(Kg)	7 units	14 units
80(Kg)	8 units	16 units
90(Kg)	9 units	18 units
100+(Kg)	10 units	20 units

AND IF blood glucose below 5.5 mmol/L - sip sugary drink/glucose regularly

Medication

If you are on any of the following medication you need to stop them when you are sick. Restart when you are well (normally after 24 to 48 hours of eating and drinking normally). When you restart your medicine, just take them as normal

ACE inhibitors – these medicines are used for heart conditions, high blood pressure and for kidney protection. If you are dehydrated, these medicines can stop your kidneys working properly.

- **Examples:** names ending in '*pril*' such as ramipril, lisinopril, perindopril

ARBs - these medicines are used for heart conditions, high blood pressure and for kidney protection. If you are dehydrated, these medicines can stop your kidneys working properly.

- **Examples:** names ending in '*sartan*' such as candesartan, irbesartan, losartan, valsartan

Diuretics – these medicines are used for excess fluid and high blood pressure and are sometimes called 'water pills'. These medicines can make dehydration more likely.

- **Examples** include bendroflumethiazide, furosemide, indapamide, bumetanide.
- If you are taking more than two tablets a day of either bumetanide or furosemide, please seek medical advice before stopping

Metformin – this is a medicine for diabetes. Dehydration can make it more likely that you will develop a serious side effect called lactic acidosis

GLP-1 analogues – these are medicines for diabetes. Dehydration can make it more likely that you will develop a serious side effect.

- **Examples** are exenatide, dulaglutide, liraglutide, lixisenatide and semaglutide

NSAIDs – these are anti-inflammatory pain killers. If you are dehydrated, these medicines can stop your kidneys working properly.

- **Examples** include ibuprofen, naproxen

SGLT2 inhibitors – these are medicines for diabetes. Dehydration can make it more likely that you will develop a serious side effect called ketoacidosis.

- **Examples:** names ending with '*flozin*' such as canagliflozin, dapagliflozin, empagliflozin and ertugliflozin