

FACT SHEET | SEPTEMBER 2023

# Surgery and type 1 diabetes (insulin injections)

## RSS Diabetes Service

Hospital admissions for surgery involve fasting, changes in your diet, physical activity levels, diabetes medications and may cause stress, anxiety and discomfort. These factors can also disrupt your usual blood glucose control and could result in hypoglycaemia (low blood glucose) or hyperglycaemia (high blood glucose).

Preparing for your surgery and responding to changes to your blood glucose following your surgery can reduce your risk of infections and promote wound healing. Your diabetes team can help you during your admission and support your safe discharge home.

## How can I prepare for my surgery?

If you are having **minor surgery**, your admission is for one day only. If you are having **major surgery**, you will be staying for at least one night.

Please bring with you to the hospital:

- All your medications and a current list.
- Your blood glucose/ketone meter, continuous glucose monitor (CGM), relevant consumables, your glucose diary and/or CGM system report. In most instances, you can continue to use your own equipment.
- Your insulin injecting devices and additional consumables. You may like to use your own insulin pens before or after your surgery.
- A copy of your *Hypoglycaemia Action Plan* and *Hyperglycaemia/Sick Day Action Plan*.

Continue to check your blood glucose. If you have low blood glucose, follow your *Hypoglycaemia Action Plan*. If high blood glucose, check your blood ketone level and follow your *Hyperglycaemia Action Plan*.

Please ask a family member or friend to bring you. Do not drive yourself to your hospital admission.

## I am also on oral diabetes medication. What about this?

**For minor surgery** continue your usual oral diabetes medication (e.g. Metformin or sodium glucose co-transporter 2 (SGLT2) inhibitor) dose up until the day **before** your procedure.

**For major surgery** and if you use a **sodium glucose co-transporter 2 (SGLT2) inhibitor** such as dapagliflozin (Forxiga<sup>®</sup>), dapagliflozin and metformin XR (Xigduo<sup>®</sup>), dapagliflozin and saxagliptin (Qtern<sup>®</sup>), empagliflozin (Jardiance<sup>®</sup>), empagliflozin and metformin (Jardiamet<sup>®</sup>) and empagliflozin and linagliptin (Glyxambi<sup>®</sup>): stop taking this medication at least 3 days before your surgery (e.g. two days prior and the day of your procedure).

## Are there specific instructions for my type of insulin?

Yes, there are specific dose adjustments for the different types of insulin used. What to do on the day prior to my surgery?

### For long acting (basal) insulin

- Continue the usual insulin dose/s OR
- Reduce your evening basal insulin dose by 20% if you have had recent overnight hypoglycaemia.

### For rapid acting (mealtime) insulin

- Continue your usual mealtime rapid acting insulin dose/s.

### For pre-mixed or co-formulation insulin

- Continue the usual insulin dose/s OR
- Reduce your evening basal insulin dose by 20% if you have had recent overnight hypoglycaemia

- Continue to check your blood glucose at your usual times and if concerned.
- If you have low blood glucose, follow your *Hypoglycaemia Action Plan*.
- If you have high blood glucose, follow your *Hyperglycaemia Action Plan*.

## What to do on the day of my surgery?

### For minor or major surgery

- Do not take your diabetes tablets.

### For long acting (basal) insulin

- Continue the usual insulin dose/s.

### For rapid acting (mealtime) insulin

- If your surgery is in the morning, you will be fasting from midnight:
  - do not take your breakfast rapid acting insulin dose as you will not be eating.
  - a correction bolus insulin dose (based on your insulin sensitivity factor/correction factor) may be given at breakfast time if you are above your blood glucose target (even when fasting).
- If your surgery is in the afternoon, you will be fasting at 6:00am after a light breakfast:
  - reduce your breakfast insulin bolus dose to match the carbohydrates in the breakfast to be eaten OR reduce your 'set' breakfast bolus by 50%.
  - a correction bolus insulin dose (based on your insulin sensitivity factor/correction factor) may be given at breakfast time if you are above your blood glucose target (even when fasting).

### For pre-mixed insulin

- If your surgery is in the morning, you will be fasting from midnight: reduce your usual breakfast insulin dose by 50%.
- If your surgery is in the afternoon, you will be fasting at 6:00am after a light breakfast: reduce your usual breakfast insulin dose by 50%.

### For co-formulation insulin

- If your surgery is in the morning, you will be fasting from midnight: do not take your usual breakfast insulin dose.
- If your surgery is in the afternoon, you will be fasting at 6:00am after a light breakfast: reduce your usual breakfast insulin dose by 50%.

- Check your blood glucose every 1-2hours from the time you wake until the time you arrive at the hospital.
- If you have low blood glucose, follow your *Hypoglycaemia Action Plan*.

- If you have high blood glucose, follow your *Hyperglycaemia Action Plan* which will include blood ketone testing and correction bolus insulin dose instructions. A blood ketone level greater than 0.6mmol/L may indicate that you are at risk of developing diabetic ketoacidosis.

## What will happen when I am admitted?

Please inform medical, nursing and/or midwifery staff of any of the following:

- hypoglycaemia and treatment used
- hyperglycaemia and action taken.

The medical, nursing and/or midwifery staff will check your blood glucose. If your blood glucose is above 10.0mmol/L, a correction bolus insulin may be used to return your blood glucose levels to target, aid recovery and assist your body to fight infection.

Where possible, self-care of your injectable devices are encouraged and supported. Regional hospitals require people with type 1 diabetes using insulin device/s to use the supplied safety pen needles. Your medical, nursing and/or midwifery staff need to know what insulin device/s you are using so that they can prevent complications and assist you in your recovery.

## What will happen after my surgery?

Your insulin injections and any oral diabetes medication (e.g. Metformin or sodium glucose co-transporter 2 (SGLT2) inhibitor) will be restarted as soon as possible after your surgery. This is usually when you are comfortably eating and drinking again.

## What support do I have on discharge?

The medical, nursing and/or midwifery staff will assist you to restart your medications and plan your discharge. They will also be available after you are discharged home to monitor your recovery and discuss any concerns that you may have.

Your diabetes team are available to discuss your return to your usual diabetes management or provide alternative instructions. If required, your diabetes team can arrange a follow up appointment to review your diabetes management after discharge.

Any changes to your insulin and/or oral diabetes medication will be based on your blood glucose and HbA1c.

Please ask a family member or friend to take you home. Do not drive yourself.

## Additional information

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## Where can I get more information?

- Diabetes Australia [www.diabetesaustralia.com.au](http://www.diabetesaustralia.com.au)
- National Diabetes Services Scheme [www.ndss.com.au](http://www.ndss.com.au)
- Juvenile Diabetes Research Foundation [www.jdrf.org.au](http://www.jdrf.org.au)
- My D (for under 25s) [www.ndss.com.au/MyD](http://www.ndss.com.au/MyD)

## For more information

### Rural Support Service

### Diabetes Service

PO Box 3017, Rundle Mall

ADELAIDE SA 5000

Email: [Health.DiabetesService@sa.gov.au](mailto:Health.DiabetesService@sa.gov.au)

[www.chsa-diabetes.org.au](http://www.chsa-diabetes.org.au)

[www.sahealth.sa.gov.au/regionalhealth](http://www.sahealth.sa.gov.au/regionalhealth)

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