# Medication Safety Notice

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Issued by Medicines and Technology Programs, SA Health
www.sahealth.sa.gov.au/medicationsafety

A patient **Safety Notice** strongly advises the implementation of particular recommendations or solutions to improve quality and safety.

## We recommend you inform:

- General Managers
- Pharmacy Directors
- Medical Directors
- Clinical Directors
- Surgical Directors
- Pre-operative Assessment Clinics
- Nursing/Midwifery Directors
- Endocrinology Departments
- Diabetes educators
- Drug and Therapeutics Committees
- Medication Safety Committees
- Safety and Quality Units
- Clinical Governance

## Contact details:

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Government of South Australia
SA Health

## Severe euglycaemic ketoacidosis with sodium-glucose co-transporter-2 inhibitors (SGLT2i) in the perioperative period

### Purpose

To raise awareness of the potential occurrence of severe euglycaemic ketoacidosis associated with the use of SGLT2i in the perioperative period.

### Background

Sodium-glucose co-transporter-2 inhibitors (SGLT2i) are oral medications that promote glucose excretion in the urine for the treatment of type 2 diabetes. They may also be used off-label in type 1 diabetes[1].

SGLT2i agents approved by the TGA are:

- dapagliflozin (Forxiga®); dapagliflozin + metformin (Xigduo XR®)
- empagliflozin (Jardiance®); empagliflozin + metformin (Jardiamet®)
- empagliflozin + linagliptin (Glyxambi®)

The Australian Diabetes Society recently issued an alert[1] regarding reports of severe euglycaemic ketoacidosis requiring ICU/HDU admission in patients taking SGLT2i agents in the perioperative period noting:

- Severe diabetic ketoacidosis (DKA) may occur with near normal or only mildly elevated glucose levels.
- The risk of DKA increases if the patient is fasting or on low carbohydrate intake, is undergoing a surgical procedure, is dehydrated or has active infection.
- The ketosis was only detected by blood ketone testing; SGLT2i may reduce urinary ketone excretion, making urine ketone testing unreliable.

### Features

Diabetic ketoacidosis should be considered in patients taking SGLT2i who become unwell, including developing abdominal pain, nausea, vomiting, fatigue or unexplained acidosis; a normal plasma glucose level does not exclude the diagnosis.

- Blood ketones should be checked in any patient on an SGLT2i who becomes unwell in the perioperative setting, even if the SGLT2i was ceased pre operatively.

### Action required by health professionals

- be aware of the risk of euglycaemic ketoacidosis associated with the use of SGLT2i in the perioperative period
- review and update perioperative procedures to alert staff to the risk of diabetic ketoacidosis and to the management of SGLT2i in the perioperative period including recommendations to cease SGLT2i three days prior to surgery
- refer to Diabetes Australia alert for detailed practice recommendations
- report all adverse events in the Safety Learning System and to the Therapeutic Goods Administration.

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## Action required by SA Health services

1. Disseminate this notice to all health professionals.

For further information, please email HealthMedicationSafety@sa.gov.au

## References


1. Australian Diabetes Society. Alert: severe euglycaemic ketoacidosis with SGLT2i use in the perioperative period
2. Meyer EJ, Gabb G, Jesudason D. SGLT2 Inhibitor-Associated Euglycaemic Diabetic Ketoacidosis: A South Australian Clinical Case Series and Australian Spontaneous Adverse Event Notifications. Diabetes Care. 2018.Published ahead of print February 13, 2018, doi:10.2337/dc17-1721 Open access article, http://care.diabetesjournals.org/content/early/2018/02/07/dc17-1721?papetoc