

Guidelines for Diabetes Management for Radiological Procedures and Surgery

(these guidelines are intended to assist *health care professionals* and they do not replace clinical judgement)

The goals of perioperative diabetes management include target blood glucoses of **140-180 mg/dl** which help:

- Avoid hypoglycemia (blood glucose 69 mg/dl or less)
- Avoid marked hyperglycemia (blood glucose 300 mg/dl or more)
- Maintain fluid and electrolyte balance and prevent ketoacidosis and hyperosmolar states

GENERAL GUIDELINES FOR GLYCEMIC MANAGEMENT:

- Patients with diabetes should have their procedure scheduled as early in the morning as possible
- Blood glucose should be monitored pre-procedure, every 1-2 hours during procedure, and after procedure

Diabetes Medication(s)*	Patient Instructions	Recommended Perioperative Management
Patients taking NO diabetes meds	→ none needed since on no diabetes meds	Use low scale correction insulin every 6 hours on NonProgressive SSI Order Set.
Patients taking oral diabetes meds or non-insulin injectables	→ Take diabetes medication(s) as prescribed the day before procedure → NO oral or non-insulin injectable diabetes meds the morning of the procedure	Use low scale correction insulin every 6 hours on NonProgressive SSI Order Set.
Patients taking insulin	<p>THE DAY BEFORE PROCEDURE: → <i>Breakfast and Lunch:</i> take normal insulin doses → <i>Supper or Bedtime:</i> If patient takes NPH, a Mixed insulin (e.g. 70/30), Lantus, or Levemir and:</p> <ol style="list-style-type: none"> a. If their usual fasting blood glucose is greater than 140 mg/dl then they can take their full dose of insulin. b. If they have a history of hypoglycemia or usual fasting blood glucoses is less than 140 mg/dl then decrease dose by 20%. c. If patient is taking a short-acting insulin (Apidra, Humalog, Novolog, Regular) at supper the insulin dose does not need to be adjusted. <p>THE MORNING OF PROCEDURE: If blood glucose greater than 300 or less than 70 mg/dl, notify physician If patient takes Apidra, Humalog, Novolog, or Regular insulin → no insulin If patient takes a Mixed insulin → take ½ the dose If patient takes Lantus, Levemir, or NPH: Type 2 patients → take ½ dose Type 1 patients → take regular dose</p>	Generally, patients who use insulin can continue with subcutaneous insulin perioperatively (rather than an insulin infusion) for procedures that are not long and complex (eg, less than two hours). IV Insulin infusions are usually needed for longer more complicated surgeries.
Patients using an INSULIN PUMP	Consult with physician or anesthesiologist.	Per physician orders

* Access Lexicomp for the most up to date list of diabetes medications

Management of Metformin Patients Receiving Contrast Media

Renal Function/Co-morbidities	Management Recommendations ¹
Normal renal function, no comorbidities	Discontinue prior to iodinated contrast study, withhold 48 hours after study and restart only after renal function has been confirmed as normal.
Normal renal function, multiple comorbidities <ul style="list-style-type: none"> • Reduced metabolism of lactate • Liver dysfunction • Alcohol abuse • Increased anaerobic metabolism • Cardiac failure • Myocardial or peripheral muscle ischemia • Sepsis or severe infection 	Discontinue prior to iodinated contrast study, withhold 48 hours after study and restart only after renal function has been confirmed as normal.
Preexisting renal dysfunction	Discontinue prior to iodinated contrast study, withhold 48 hours after study and restart only after renal function has been confirmed as returning to baseline.

Reference

1. Lexicomp @ online.lexi.com accessed Oct 15, 2015.

List of Medications with Metformin:

- Metformin
- Fortamet®
- Glucophage®
- Glumetza®
- Riomet®

Brand names of combination products

- Actoplus Met® (containing Metformin, Pioglitazone)
- Avandamet® (containing Metformin, Rosiglitazone)
- Janumet® (containing Metformin, Sitagliptin)
- Jentadueto® (containing Linagliptin, Metformin)
- Kombiglyze® XR (containing Metformin, Saxagliptin)
- Prandimet® (containing Metformin, Repaglinide)

*list is accurate at time of writing. New products may be available. Access Lexicomp for the most up to date list of diabetes medications.