Perioperative Management of Adults with Diabetes

Children, obstetric and renal patients are not included in this guideline

- Try to ensure patient first on the list
- Monitor blood sugar hourly

Guideline for pre operative adjustment of non-insulin medication (short starvation period- no more than one missed meal)

Tablets	Day prior to admission	Patient for AM surgery	Patient for PM surgery
Acarbose	Take as normal	Omit morning dose if **NBM**	Give morning dose if eating
Meglitinide (Repaglinide or Nateglinide)	Take as normal	Omit morning dose if **NBM**	Give morning dose if eating
Metformin (procedure not requiring use of contrast media*)	Take as normal	Take as normal	Take as normal
Sulphonylurea (E.g Glibenclamide, Gliclazide, Glipizide, etc.) Glimepiride	Take as normal	Once daily AM omit Twice daily omit AM	Once daily AM omit Twice daily omit AM and PM
Pioglitazone	Take as normal	Take as normal	Take as normal
DPP IV inhibitor (e.g. Sitagliptin, Linagliptin, saxagliptin)	Take as normal	Omit on day of surgery	Omit on day of surgery
GLP-1 analogue (e.g. Exenatide, Liraglutide, Lixisenatide)	Take as normal	Omit on day of surgery	Omit on day of surgery
SGLT2 (e.g. Dapagliflozin, Canagliflozin)	Take as normal	Omit on day of surgery	Omit on day of surgery

NBM – nil by mouth, OD – once daily, BD – twice daily, TDS – three times daily, Am – morning, PM – afternoon

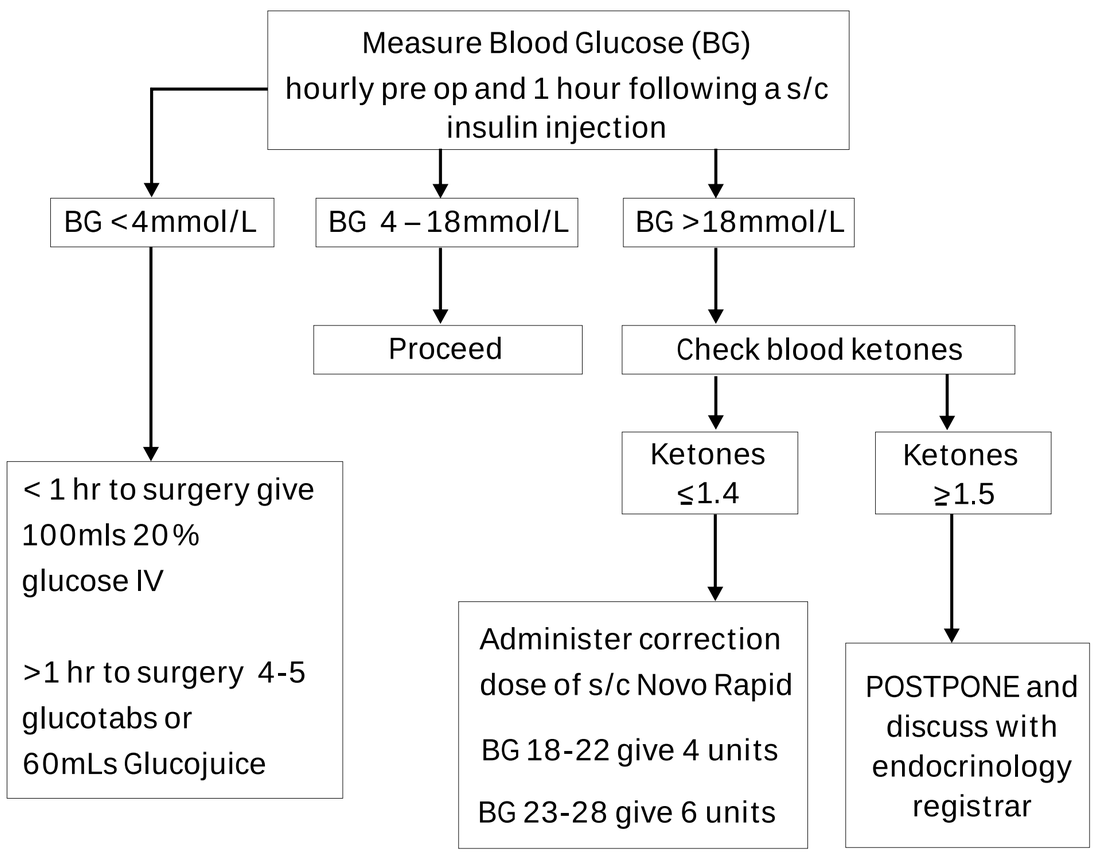
* If contrast medium is to be used and eGFR less than 50 mls/min/1.73m, Metformin should be omitted on the day of the procedure and the following 48 hours.

Guideline for pre operative adjustment of insulin (short starvation period – no more than one missed meal)

Insulin	**Day prior to admission**	**Patient for AM surgery**	**Patient for PM surgery**
Once daily (evening) (e.g. Lantus or Levemir, Insulatard, Humulin I and Insuman **Basal**)	No dose change*	Check BG on admission	Check BG on admission
Once daily (morning) (e.g. Lantus or Levemir, Insulatard, Humulin I and Insuman **Basal**)	No dose change	No dose change* Check BG on admission	No dose change* Check BG on admission
Twice daily (e.g**m** Novomix 30, Humulin M3B) Humalog Mix 25 Humalog Mix 50 Insuman Comb 15 Insuman Comb 25 Insuman Comb 50 Twice daily levemir or Lantus	No dose change	Halve the usual morning dose. Check BG on admission Leave the evening meal dose unchanged	Halve the usual morning dose. Check BG on admission Leave the evening meal dose unchanged
Twice daily – separate injections of short acting e.g. animal neutral, Novorapid Humulin S Apidra **and intermediate acting** e.g. animal isophane Insulatard Humilin I Insuman Basal	No dose change	Calculate the total dose of both morning insulin and give half as intermediate acting only in the morning. Check BG on admission Leave the evening meal dose uncharged.	Calculate the total dose of both morning insulin and give half as intermediate acting only in the morning. Check BG on admission Leave the evening meal dose uncharged.
3,4, or 5 injections daily	No dose change	**Basal bolus regimens:** Omit the morning and lunchtime short acting insulins. Keep the basal unchanged. * **Premixed AM insulin:** Halve the morning dose and omit lunchtime dose Check BG on admission	Take usual morning insulin dose(s) Omit lunch time insulin check BG on admission

* Patients who graze during the day may need a one third reduction of long acting basal insulin

Pre operative management of hypo and hyperglycaemia in patients who do not require a Variable Rate Intravenous Insulin Infusion (VRIII)



Pre operative care

- Ideal HbA1c is less than 69 mmol/mol
- Minimise fasting and place first on the list
- Ensure BG performed within the hour prior to induction of anaesthesia and hourly thereafter

Intra operative care

- BG should be measured hourly and documented on the anaesthetic chart
- Correct developing hyperglycaemia using the chart opposite or with a VRIII
- Avoid administering dexamethasone and maintain normothermia

Intraoperative fluid therapy

- No VRIII: preference of the anaesthetist
- With VRIII: 0.45% NaCl + 5% Dex + 20mmol potassium chloride available in 500ml bags, as maintenance fluid. Stored in PACU

Post operative care

- Continue to measure BG hourly in PACU and commence VRIII if sustained unresponsive hyperglycaemia
- Once patient eating and drinking commence usual oral hypoglycaemic medication or follow discontinuation guidelines on the VRIII prescription chart if appropriate

Indications for the use of the VRIII

- Patients who are missing more than one meal
- Patients which are clinically unwell and hyperlycaemic pre-operatively
- Patients that have not responded to the management above and remain hyperglycaemic

Patients already on VRIII

- Do not discontinue the VRIII intra operatively and follow guidance on the VRIII prescription chart regarding insulin rate
- **It is unsafe to discontinue a VRIII in a patient with Type 1 diabetes unless long acting basal insulin is on board (Levemir or Glargine). **

Patients on continuous subcutaneous insulin pump therapy

- Seek advice from Diabetes Nurse Specialist (Ext 6091)
- Site cannula for anaesthesia away from the pump
- Cover the pump with lead protection during x-ray
- Commence VRIII if pump disconnected/ dislodged to prevent ketosis developing

Useful contact numbers

In hours	Diabetes Nurse Specialists York Ext 6091 and 5793 Scarborough Ext 2803 and 2804
Out of hours:	Medical Registrar on call

Authors: Suzanne Taylor, Think Glucose Team. Owner: Think Glucose Team. Version:1. Date approved: Jan 2015. Approved by: Endocrine Directorate, Drug & Therapeutics Committee. Review date: Jan 2018