

## Management of Patients with Diabetes Undergoing Endoscopy

### Protocol Responsibilities and Authorisation

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### Protocol Review History

Version	Updated by	Date Updated	Summary of Changes
01	Jeweleigh Bates	16 May 2016	New protocol
02	Jeweleigh Bates	19 October 2016	Wording change for clarity in 2.3
03	Liz Phillips / Justina Wu	23 November 2020	New medication tables updated, Addition of Ryan Paul comments on liraglutide and ketone monitoring, formatting and clarification on instructions  Adjustment to the advice for mixed insulin and prandial insulin prior to upper endoscopic procedure. Correction of the ketone value in section 2.4. Addition of follow up actions to prevent further hypoglycaemia in section 2.6
3.1	Angelica Carvajal/ Justina Wu	01 March 2021	Re-issue for minor changes: Added 'bronchoscopy' and 'Endobronchial Ultrasound' to headings of tables 2.1.1 and 2.1.2; Added under "3 Patient Information" (found on page 11) & "5.3 Associated Waikato DHB Documents" 'G2455HWF Bronchoscopy/EBUS Patient Information'; Reviewed by Dr, Janice Wong, head of Interventional bronchology, and approved by document owner & sponsor. Addition of Dulaglutide/Trulicity into non-insulin drug tables 2.1.1 and 2.2.1. Rewording of a double negative sentence for clarity in section 2.6, first point. Change of glucose parameter for correctional rapid-acting insulin dosage to $\geq 11$ instead of $>11$ .

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## Management of Patients with Diabetes Undergoing Endoscopy

### 1 Overview

#### 1.1 Purpose

The preparation and management of patients with diabetes undergoing endoscopic procedures.

#### 1.2 Scope

Waikato District Health Board staff.

#### 1.3 Patient Client Group

Patients with diabetes undergoing endoscopic procedures.

#### 1.4 Exceptions / contraindications

- Patients assessed as inappropriate for procedures as per best practice guidelines
- Comorbidities requiring specialist advice- Chronic Kidney disease (CKD 4 and 5), Cystic Fibrosis

#### 1.5 Definitions

<b>CBG</b>	Capillary Blood Glucose
<b>GA</b>	General Anaesthesia
<b>COF</b>	Clear Oral Fluids) includes water, lemonade ice blocks, diet soft drinks (not coloured purple or red, also have normal soft drinks available if hypoglycaemic), coffee or tea without milk, clear broth e.g. beef stock.
<b>SMBG</b>	Self-Monitoring of Blood Glucose. If diabetes present and normally on sulphonylureas or insulin, must check CBG 4 hourly starting at lunch time the day prior to the procedure. Treat hypoglycaemia (CBG < 4.0) as per "Hypoglycaemia Treatment Protocol". If CBGs are 11 or higher, may give correctional rapid acting insulin every 4 hours if normally taking rapid acting insulin. See "Correction Rapid Acting Insulin".
<b>HDSS</b>	Health and Demographic Surveillance system
<b>NCNZ</b>	Nursing Council of New Zealand

### 2 Clinical Management

#### 2.1 Preparation for Upper Endoscopic Procedures

Procedure	Morning Procedure	Afternoon Procedure
Upper Endoscopy (UGI), Endoscopic Ultrasound (EUS), Endoscopic Retrograde Cholangio-Pancreatography (ERCP), Bronchoscopy, and Antegrade Double Balloon (ADBE).	*No food from midnight. *Allowed clear fluids until 2 hours prior to procedure	Breakfast before 7am Allowed clear fluids until 2 hours prior to procedure

## Management of Patients with Diabetes Undergoing Endoscopy

### 2.1.1 Changes to medications for patients on Non-insulin Hypoglycaemic medications (Upper GI procedure, Bronchoscopy, Endobronchial Ultrasound)

Class	Medication	Day before procedure	Day of procedure (both morning and afternoon list)	Post procedure
Biguanides	Metformin	Give	Omit	If eGFR back to baseline and patient is cardiovascularly stable restart with first meal (withhold for minimum of 48 hours if IV contrast given). Metformin contraindicated if eGFR<30ml/min.
Sulphonylureas	Gliclazide, Glipizide, Glibenclamide, Tolbutamide	Usual am dose Omit subsequent doses	Omit May give correction rapid acting insulin if CBG > 11 mmol/L	Restart with first meal
α-Glucosidase Inhibitors	ACARBOSE	Give	Omit	Restart with first meal
PPAR Agonist	Pioglitazone	Take as usual	Omit	Restart with first meal
DPP IV Inhibitor	Sitagliptin (Vildagliptin)	Take as usual	Omit	Resume usual dose when patient is eating and drinking normally
SGLT-2 Inhibitor	Canagliflozin (Invokana) Empagliflozin (Jardiance) Dapagliflozin (Forxiga)	Omit 3 days prior to procedure	Omit	Resume when patient is eating and drinking normally (patients on this medication are at risk of euglycaemic ketoacidosis in the perioperative period)
GLP-1 agonists (short-acting twice daily sc injections)	Byetta Exenatide	Omit 3 days prior to procedure	Omit	Resume usual daily dose once patient is eating and drinking normally
GLP-1 Agonist (once daily injection)	Liraglutide	Omit 3 days prior to procedure	Omit	Resume usual daily dose once patient is eating and drinking normally
GLP-1 agonists (long-acting once weekly sc injections)	Bydureon Dulaglutide (Trulicity)	Omit 2 weeks prior to procedure	Omit	Resume usual weekly dose once patient is eating and drinking normally

## Management of Patients with Diabetes Undergoing Endoscopy

### 2.1.2 Changes to medication for patients on Insulin (Upper endoscopic procedures, Bronchoscopy, Endobronchial Ultrasound)

Type of Insulin	Medication	Day before Procedure	Day of Procedure Morning List	Day of Procedure Afternoon List
Long Acting and Intermediate Acting (Basal) AM Dosing	Lantus Levemir  Protaphane Humulin N	• Usual am dose	• 2/3rd usual am dose	• 2/3rd usual am dose
Long Acting and Intermediate Acting (Basal) PM Dosing	Lantus Levemir  Protaphane Humulin N	2/3rd usual pm dose (read 2.3 for further information)	• Usual pm dose after procedure and eating	Usual pm dose after procedure and able to eat
Mixed Insulin od or bd	Humalog Mix 25 Humalog Mix 50 NovoMix 30 Penmix 30	• Usual am dose • ½ usual pm dose	• Omit am dose • On admission, give 0.1 u/kg of Protaphane sc	½ usual am dose Usual pm dose after procedure and able to eat
Rapid Acting (Prandial) Insulin (i.e. taken with meals, onset 10 min) Short Acting (onset 30 min)	Novorapid Humalog Apidra Actrapid	• Omit prandial dosage after midnight (as will be fasting) • Give correction rapid acting insulin if CBG > 11 mmol/L four hourly at usual dose	• Omit • May give correction rapid acting insulin if CBG > 11 mmol/L four hourly.	Usual am dose with breakfast Usual pm dose after procedure and able to eat
CSII-Insulin Pump Case should be discussed with diabetes registrar through the Waikato Hospital switchboard or with the patients usual endocrinologist or diabetes CNS.	Novorapid Humalog Apidra	• Reduce basal rate by 20% at lunch time • Continue usual prandial (per CHO counting) and correction dosages at usual dose	• Reduce basal rate by 20% when NBM • Omit meal boluses as no CHO intake • Continue usual correction dose • If duration of procedure is < 1 hour, and the patient will be able to manage the pump within 30 min after the procedure, then continue on pump therapy. • If unable to remain on pump, give 0.1 units/kg Protaphane sc and discontinue infusion by the pump 2 hours after Protaphane administered • Restart pump as soon as the patient is awake and able to manage the pump post-procedure. • CBG should be > 8.0 mmol/L for the procedure. • CBG must be checked hourly!	Reduce basal rate by 20% when NBM • Omit meal boluses as no CHO intake • Continue usual correction dose • If duration of procedure is < 1 hour, and the patient will be able to manage the pump within 30 min after the procedure, then continue on pump therapy. • If unable to remain on pump, give 0.1 units/kg Protaphane sc and discontinue infusion by the pump 2 hours after Protaphane administered • Restart pump when the patient is awake and able to manage the pump post-procedure.. • CBG should be > 8.0 mmol/L for the procedure. • CBG must be checked hourly!

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## Management of Patients with Diabetes Undergoing Endoscopy

### 2.2 Preparation for Lower Endoscopic and Capsule Procedures

Procedure	Day Prior	Day of Procedure
Colonoscopy or Retrograde Double Balloon Morning procedure Klean prep or Picosalax preparation	<ul style="list-style-type: none"> <li>• Able to have breakfast the day prior then nothing but clear oral fluids at least 2 litres (COF) until procedure.</li> <li>• At 1700 (5pm), commence drinking 3 sachets Klean prep mixed with 3 litres of COF or 1 sachet of Picosalax mixed with 150 ml of water.</li> <li>• Then drink a further 5 X 250 mls COF.</li> </ul> <p>COF should be sugar free unless hypoglycaemia (CBG &lt; 4.0 mmol/L) occurs.</p>	<ul style="list-style-type: none"> <li>• At 0500 am, drink the remaining 1 Klean prep sachet mixed with 1 litre COF or the 2nd sachet of Picosalax mixed with 150 mls water, then drink an additional 3 X 250 mls of COF at 0500 am.</li> <li>• Continue COFs until procedure (unless having procedure under GA. Then stop drinking 2 hours prior. COF should be sugar free unless hypoglycaemia (CBG &lt; 4.0 mmol/L) occurs.</li> </ul>
Colonoscopy or Retrograde Double Balloon Afternoon procedure Klean prep or Picosalax preparation	<p>Able to have breakfast and lunch the day prior. Then nothing to eat or drink but COF until procedure. At 1800 (6pm), commence drinking 2 sachets of Klean Prep mixed with 2 litres of COF or 1 sachet of Picosalax mixed with 150 mls of water, then drink an additional 5 X 250 mls COF.</p> <p>If diabetes present, the COF should be sugar free unless hypoglycaemia (CBG &lt; 4.0 mmol/L) occurs.</p>	<ul style="list-style-type: none"> <li>• At 0800 am, drink the remaining 2 X sachets of Klean prep mixed with 2 litres of COF or the 2nd sachet of Picosalax mixed with 150 mls of water, then drink a further 3 X 250 mls of COF.</li> <li>• Continue drinking until procedure unless having a GA. Then stop drinking 2 hours prior. COF should be sugar free unless hypoglycaemia (CBG &lt; 4.0 mmol/L) occurs.</li> </ul>
Capsule Endoscopy	<ul style="list-style-type: none"> <li>• Breakfast the day prior, then nothing but COF.</li> <li>• Drink 1 sachet of Klean prep mixed with 1 litre of COF at 1300 (1pm) and 1 sachet of Klean prep mixed with 1 litre of COF at 1900 (7pm). Nil by mouth as of 2400 (midnight). COF should be sugar free unless hypoglycaemia (CBG &lt; 4.0 mmol/L) occurs.</li> </ul>	<ul style="list-style-type: none"> <li>• Nil by Mouth</li> </ul>

## Management of Patients with Diabetes Undergoing Endoscopy

### 2.2.1 Changes to medications for patients on Non-insulin Hypoglycaemic medications (Lower GI procedure)

Class	Medication	Day before Procedure	Day of Endoscopy (both morning and afternoon list)	Post Procedure
Biguanides	Metformin	Omit	Omit	If eGFR back to baseline and patient is cardiovascularly stable restart with first meal (withhold for minimum of 48 hours if IV contrast given). Metformin contraindicated if eGFR < 30ml/min.
Sulphonylureas	Gliclazide, Glipizide, Glibenclamide, Tolbutamide	Usual am dose and omit subsequent doses	<ul style="list-style-type: none"> <li>• Omit</li> <li>• May give correction rapid acting insulin if CBG &gt; 11 mmol/L.</li> </ul>	Restart with first meal
Glucosidase Inhibitors	ACARBOSE	Omit	Omit	Restart with first meal
PPAR $\gamma$ Agonist	Pioglitazone	Omit	Omit	Restart with first meal
DPP IV Inhibitor	Sitagliptin (Vildagliptin)	Omit	Omit	Resume usual dose when patient is eating and drinking normally
SGLT-2 Inhibitor	Canagliflozin (Invokana) Empagliflozin (Jardiance) Dapagliflozin (Forxiga)	Stop 4 days prior to procedure	Omit	Resume when patient is eating and drinking normally (patients on this medication are at risk of euglycaemic ketoacidosis in the perioperative period)
GLP-1 agonists (short-acting twice daily sc injections)	Byetta	Omit 4 days prior to procedure	Omit	Resume usual dose when patient is eating and drinking normally
GLP-1 agonists (long-acting once weekly sc injections)	Bydureon Dulaglutide (Trulicity)	Omit 2 weeks prior to procedure	Omit	Resume usual dose when patient is eating and drinking normally

## Management of Patients with Diabetes Undergoing Endoscopy

### 2.2.2 Changes to medications for patients on Insulin (Lower GI procedure and capsule)

Type of Insulin	Medication	2 Days before Procedure	Day before Procedure	Day of Procedure Morning and Afternoon List
Long Acting and Intermediate Acting (Basal) AM Dosing	Lantus Levemir  Protaphane Humulin N	Usual am dose	2/3rd usual am dose (read 2.3 for further information)	• 2/3rd usual am dose
Long Acting and Intermediate Acting (Basal) PM Dosing	Lantus Levemir  Protaphane Humulin N	2/3 usual pm dose	2/3rd usual pm dose (read 2.3 for further information)	• Usual pm dose after procedure and able to eat
Mixed Insulin od or bd	Humalog Mix 25 Humalog Mix 50 NovoMix 30 Penmix 30	Usual dose	• 2/3rd usual am dose • ½ usual pm dose	• Omit am dose • On admission, give 0.1 u/kg of Protaphane sc Usual pm dose after procedure and able to eat
Rapid Acting (Prandial) Insulin (i.e. taken with meals, onset 10 min) Short Acting (onset 30 min)	Novorapid Humalog Apidra Actrapid	Usual dose	• Omit prandial dosage after breakfast • Give correction rapid acting insulin if CBG $\geq$ 11 mmol/L four hourly.	• Omit • May give correction rapid acting insulin if CBG $\geq$ 11 mmol/L four hourly.
CSII-Insulin Pump Case should be discussed with diabetes registrar through the Waikato Hospital switchboard or with the patient's usual endocrinologist or diabetes CNS	Novorapid Humalog Apidra	Usual dose	• Reduce basal rate by 20% at lunch time • Continue usual prandial (per CHO counting) and correction dosages	• Reduce basal rate by 30% • Omit meal boluses as no CHO intake • Continue usual correction dose • If duration of procedure is < 1 hour, and the patient will be able to manage the pump within 30 min after the procedure, then continue on pump therapy. • If unable to remain on pump, give 0.1 units/kg Protaphane sc and discontinue infusion by the pump 2 hours after Protaphane is administered. • Restart pump when the patient is awake and able to manage the pump post-procedure. • CBG should be > 8.0 mmol/L for the procedure. • CBG must be checked hourly!



## Management of Patients with Diabetes Undergoing Endoscopy

### 2.3 Intermediate and Long Acting Insulin Precautions

#### Intermediate and Long Acting Insulin Precautions!

Ideally the patient with appropriately dosed intermediate or long-acting insulin should be able to manage their blood glucose levels during the day and night prior to the procedure by administering only basal insulin. However this leaves little room for error. A standard dosage of basal insulin in a person with normal insulin sensitivity is 0.2-0.3 units/kg of body weight per day. If you suspect that the dosage is set too high as an outpatient or well above standard dosage, then it would be wise to advise patients to reduce the dosage to half of their usual dosage as opposed to 2/3rd of their usual dosage.

#### CSII – Insulin Pump Therapy Precautions!

Continuous Subcutaneous Insulin Infusion (CSII), also known as insulin pump therapy, is now commonly used in patients with Type 1 diabetes. This has implications for inpatient procedures as the pump cannot be exposed to electromagnetic forces as this may alter infusion rates.

Pumps should be removed in the following radiological procedures:

- Radiology – general x-rays, CT, angiograms, nuclear medicine imaging, mammography, MRI and radiotherapy.
- If duration of these radiological procedures is expected to be less than one hour, remove the pump temporarily. Do not take the pump into the procedure room.
- If duration of procedure is expected to be greater than one hour, give basal insulin (Protaphane 0.1 units/kg) and then discontinue and remove the pump 2 hours after Protaphane is administered. Restart the pump following procedure.

### 2.4 Monitoring of CBG for people with diabetes

#### MONITORING OF CBG AND KETONES FOR PEOPLE WITH DIABETES

**At home:** If a person has diabetes and is taking sulphonylureas or insulin, they must check their blood glucose levels every 4 hours when they are nil by mouth or on COF at home.

If CBG is < 4.0 mmol/L, then must treat for hypoglycaemia as per protocol.

If CBG is  $\geq$  11.0 mmol/L, then correction rapid acting insulin can be given 4 hourly.

If CBG > 12 mmol/L check ketone measurement. If > 2+ ketones on urine sticks or > 1.0 mmol/L on POC blood ketone testing, seek diabetes specialist nurse advice

#### At hospital/clinic:

If a person has diabetes, CBG is to be checked upon admission and then 2 hourly with a CBG check within 1 hour of the procedure.

If a person is on CSII (Insulin Pump), then check CBGs hourly.

If CBG is < 4.0 mmol/L, then must treat for hypoglycaemias per protocol.

If CBG are  $\geq$  11.0 mmol/L, then correction rapid acting insulin can be given 4 hourly. If CBG > 12 mmol/L, check ketone measurement. If > 3 mmol/L or > 2+ ketones on urine sticks, evaluate for DKA

### 2.5 Correction rapid acting Insulin

#### CORRECTION RAPID ACTING INSULIN

If a person with diabetes is already using correction dosages of rapid acting insulin and NBM or on COF, they may continue to use the correction dosages of their rapid acting insulin 4 hourly if the CBGs are > 11 mmol/L according to their usual dosage.

#### Standard correction doses which can be given with Novorapid, Humalog or Apidra:

- Give correction dosage at 1 unit for every 3mmol of CBG greater than 8.0 mmol/L when CBGs are  $\geq$  11mmol/L.
- Correction dosages can be given 4 hourly when NBM or on COF or at meal times if eating normally.
- Repeat CBG 1 hour after correction dose to ensure CBG is decreasing.
- If CBG is not decreasing, consider starting insulin infusion in hospital.

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### 2.6 Management of hypoglycaemia (CBG < 4.0 mmol/L)

MANAGEMENT OF HYPOGLYCAEMIA: ALL PATIENTS (Also refer to document available on Waikato DHB intranet: 'Diabetic Emergencies: Hypoglycaemia')	
Conscious patient	Unconscious patient
<p><b>Step 1</b> If CBG 3 – 3.9 mmol/L give 15g glucose* If CBG &lt;3 mmol/L give 30 g glucose*</p> <p><b>Step 2</b> Wait 10 minutes and recheck If CBG still &lt;4 mmol/L, repeat step 1 and call for medical review</p> <p><b>Step 3</b> Once CBG ≥4 mmol/L, give meal if due or carbohydrate snack if patient is eating</p>	<p>Do not give oral fluids</p> <p><b>Step 1</b> Give 150 mL of 10% dextrose IV stat OR Give 30 mL of 50% dextrose IV over 10 minutes OR Glucagon 1 mg IM if no IV access</p> <p><b>Step 2</b> Wait 10 minutes and recheck. If CBG still &lt;4 mmol/L, repeat step 1 for either the unconscious patient or conscious patient dependent on patient status and call for medical review</p> <p><b>Step 3</b> Once CBG ≥4 mmol/L, consider continuous 10% IV dextrose to avoid recurrent hypoglycaemia if the patient remains unconscious Once conscious, follow steps outlined in steps 1, 2, and 3</p>
*How to get approximately 15g glucose	
Standard treatment	Second choice (if standard treatments not available)
1 Hypo-fit gel 3 x 5 g glucose tablets, or 5 Dextro energy tablets	3 teaspoons sugar 3 heaped teaspoons jam 3/4 glass (175 mL) ordinary (i.e. not diet varieties) soft drink, cordial, or juice 9 jellybeans
<b>Finish:</b> <ul style="list-style-type: none"> <li>If CBG does not increase to ≥4mmol/L after 10 minutes, repeat glucose treatment and call for medical review</li> <li>If CBG reaches ≥4mmol/L, then monitor CBG every 10 minutes for 30 minutes</li> </ul>	

- Follow up the treated hypoglycaemia with a 15 g complex carbohydrate snack if allowed. See item 2.7 for sources of complex carbohydrates. If complex carbohydrate snacks are NOT allowed, then recheck CBG 1 hour after treatment of hypoglycaemia in addition to the usual CBGs check every 10 minutes for 30 minutes after hypoglycaemia treatment.
- Medical review to prevent reoccurrence of hypoglycaemia.
- Diabetic CNS is available for advice via the Hospital switchboard

## Management of Patients with Diabetes Undergoing Endoscopy

### 2.7 Sources of 15g fast acting carbohydrates

When Not NBM and Conscious	When NBM or Unconscious with IV access	When Unconscious and No IV access
<ul style="list-style-type: none"> <li>• 1 sachet of Hypofit gel (COF) (Preferred source of glucose)</li> <li>• 3 teaspoons sugar dissolved in water (COF)</li> <li>• 175 ml hypo juice (COF)</li> <li>• ¾ cup of regular fruit juice (COF)</li> <li>• 1 tablespoon honey (COF)</li> <li>• 5 vita glucose tablets</li> <li>• 9 jellybeans</li> </ul>	1 sachet Hypofit gel <ul style="list-style-type: none"> <li>• 150 ml of 5% Dextrose IV</li> <li>• 15 ml of 50% Dextrose IV</li> </ul>	Glucagon 1 mg IM  (Glucose, in this case, comes from the liver.)

**Each item below provides 10 g of Complex Carbohydrates**

- 1 slice of sandwich bread
- 2 crackers or plain biscuits
- Milky Milo (1 teaspoon of Milo)
- Piece of fruit
- Glass of milk (200 ml)
- 120 g light yoghurt
- Small bran muffin (diabetic muffin)

### 3 Patient information

- A1261HWF Colonoscopy Worksheet
- C1371HWF Colonoscopy information
- C1535HWF Endoscopy Patient handout
- G1499HWF Upper GI Endoscopy Information sheet
- G1638HWF Wireless Capsule Endoscopy Patient brochure
- G2455HWF Bronchoscopy/EBUS Patient Information

## Management of Patients with Diabetes Undergoing Endoscopy

### 4 Audit

#### 4.1 Indicators

- Significant Hyperglycaemia (BGL > 15) and hypoglycaemia BGL < 3.0) associated with following this guideline registered through Datix.
- All patients are prepared for this procedure as per 2.1 to 2.7.
- There is documented evidence of post procedure physiological monitoring as per diabetic management policy.
- Procedural cancellation due to diabetes are investigated and action taken to prevent a reoccurrence.

#### 4.2 Tools

- Retrospective audit can include but is not limited to:
- Review of patient's clinical notes
- Patient Satisfaction Surveys and questionnaires
- Datix Incident Management

### 5 Evidence Base

#### 5.1 Bibliography

- Perioperative management of blood glucose in adults with diabetes mellitus-Up to date [https://www.uptodate.com/contents/perioperative-management-of-blood-glucose-in-adults-with-diabetes-mellitus?search=diabetes+surgery&source=search\\_result&selectedTitle=1%7E150&usage\\_type=default&display\\_rank=1](https://www.uptodate.com/contents/perioperative-management-of-blood-glucose-in-adults-with-diabetes-mellitus?search=diabetes+surgery&source=search_result&selectedTitle=1%7E150&usage_type=default&display_rank=1)
- Antihyperglycemic therapy during colonoscopy preparation: A review and suggestions for practical recommendations as reviewed in United European Gastroenterology Journal 2019-reviewed May 2020 <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=13&cad=rja&uact=8&ved=2ahUKEwi3j9vfgLLpAhXR4jgGHa7GB2MQFjAMegQIBRAB&url=https%3A%2F%2Fwww.ncbi.nlm.nih.gov%2Fpmc%2Farticles%2FPMC6620874%2F&usq=AOvVaw1V0qLI4-vVmx4MZbbd2v4U>
- Peri-procedural DKA and SGLT2 inhibitor use as reviewed May 2020 [http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&uact=8&ved=2ahUKEwi5lt70-LHpAhUqzDgGHfxVD4MQFjABegQIBBAB&url=http%3A%2F%2Fwww.anzca.edu.au%2Fdocuments%2Fads\\_alert-update-\(002\).pdf&usq=AOvVaw2oLSo8iy1v2IHPM9jXVMp5](http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&uact=8&ved=2ahUKEwi5lt70-LHpAhUqzDgGHfxVD4MQFjABegQIBBAB&url=http%3A%2F%2Fwww.anzca.edu.au%2Fdocuments%2Fads_alert-update-(002).pdf&usq=AOvVaw2oLSo8iy1v2IHPM9jXVMp5)

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### 5.2 External Standards

- Quality standards for diabetes care Ministry of Health NZ 2016 as reviewed May 2020  
<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=12&cad=rja&uact=8&ved=2ahUKEwimos67-rHpAhWCzzgGHbGmA7kQFjALegQIAxAB&url=https%3A%2F%2Fwww.health.govt.nz%2Four-work%2Fdiseases-and-conditions%2Fdiabetes%2Fquality-standards-diabetes-care&usq=AOvVaw3Olytflrsm01ILGeUMCkOt>

### 5.3 Associated Waikato DHB Documents

- Waikato DHB [Perioperative Management of Diabetes Mellitus](#) guideline (Ref. 3037)
- A1261HWF Colonoscopy Worksheet
- C1371HWF Colonoscopy information
- C1535HWF Endoscopy Patient handout
- G1499HWF Upper GI Endoscopy Information sheet
- G1638HWF Wireless Capsule Endoscopy Patient brochure
- G2455HWF Bronchoscopy/EBUS Patient Information

### 5.4 Summary of Evidence

- Guideline process reviewed by Endocrine, Gastroenterology and Anaesthetic physicians.

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