

# Prescription for Cardiorenal Protection with diabetes

Prescriber's Name: \_\_\_\_\_

Address: \_\_\_\_\_

Tel: \_\_\_\_\_

Fax: \_\_\_\_\_

Patient's Name: \_\_\_\_\_

Address: \_\_\_\_\_

Tel: \_\_\_\_\_

STEP 1:	STEP 2: Choose Cardiovascular protection agent(s) from the following list			Dosing/Additional Considerations	
<b>Is the patient...</b> – Age >40? OR – Age >30, and diabetes >15 years? OR – Warranted for statin therapy based on the <a href="#">Canadian Cardiovascular Society Lipid Guidelines?</a>	<b>Statin</b>	<b>STATIN</b>			<b>Dosing:</b> see start and maximum doses listed for each statin.  High-intensity statin therapy (lowers LDL-C by ≥50%) - Atorvastatin 40 - 80 mg - Rosuvastatin 20 - 40 mg  Moderate-intensity statin therapy (lowers LDL-C by 30 - 49%) - Atorvastatin 10 - 20 mg - Rosuvastatin 5 - 10 mg - Simvastatin 20 - 40mg - Pravastatin 40 - 80 mg - Lovastatin 40 mg - Fluvastatin 80 mg
YES →		<input type="checkbox"/> <b>Atorvastatin</b> (Lipitor®) <input type="checkbox"/> 10 mg (start 10 mg OD) <input type="checkbox"/> 20 mg <input type="checkbox"/> 40 mg <input type="checkbox"/> 80 mg (max 80 mg OD)	<input type="checkbox"/> <b>Fluvastatin</b> (Lescol®) <input type="checkbox"/> 20 mg (start 20 mg OD) <input type="checkbox"/> 40 mg <input type="checkbox"/> 80 mg (max 80 mg OD)	<input type="checkbox"/> <b>Lovastatin</b> (Mecavor®) <input type="checkbox"/> 20 mg (start 20 mg OD) <input type="checkbox"/> 40 mg (max 80 mg OD)	
<b>Is the patient...</b> – Age > 55 with additional CV risk factor <sup>†</sup> <b>Does the patient have...</b> – Retinopathy – Neuropathy – Left Ventricular Hypertrophy	<b>Statin + ACEI or ARB</b>	<b>ACE INHIBITORS</b>		<b>ARB</b>	<b>Dosing:</b> see start and maximum doses listed. Increase doses at 2 - 3 week intervals.  *ACE-inhibitor or ARB (angiotensin receptor blocker) should be given at doses that have demonstrated vascular protection  If risk of dehydration cannot be managed, provide education on <a href="#">sick day management</a> .
YES →		<input type="checkbox"/> <b>Perindopril</b> (Aceon®, Coversyl®) <input type="checkbox"/> 2 mg <input type="checkbox"/> 4 mg (start 4 mg OD) <input type="checkbox"/> 8 mg* (max 16 mg OD)	<input type="checkbox"/> <b>Ramipril</b> (Altace®) <input type="checkbox"/> 1.25 mg <input type="checkbox"/> 2.5 mg (start 2.5 mg OD) <input type="checkbox"/> 5 mg <input type="checkbox"/> 10 mg* (max 20 mg OD)	<input type="checkbox"/> <b>Telmisartan</b> (Micardis®) <input type="checkbox"/> 20 mg <input type="checkbox"/> 40 mg (start 40 mg OD) <input type="checkbox"/> 80 mg* (max 80 mg OD)	
<b>Is the patient...</b> – Age >60 with ≥2 CV risk factors <sup>‡</sup> <b>Does the patient have...</b> – Kidney disease (ACR>2.0 and/or eGFR<60mL/min/1.73m <sup>2</sup> ) – Heart Failure	<b>Statin + ACEI or ARB + SGLT-2i and/or GLP-1ra</b> (if not type 1 diabetes)	<b>GLP-1 RECEPTOR AGONIST</b> (not indicated if type 1 diabetes)			<b>Dosing:</b> See <a href="#">Renal Dosing Chart</a> for doses in CKD. Dose should be uptitrated to a minimum dose that has demonstrated cardiorenal benefit(*)  GLP-1ra dosing considerations: start at low doses and titrate up slowly to reduce gastrointestinal side effects.  SGLT-2i dosing considerations: All SGLT-2i can be started at GFR >30 mL/min/1.73m <sup>2</sup> and may be continued if GFR falls below 30 mL/min/1.73m <sup>2</sup> . If risk of dehydration cannot be managed, provide education on <a href="#">sick day management</a>
YES →		<input type="checkbox"/> <b>Dulaglutide</b> (Trulicity®) <input type="checkbox"/> 0.75 mg s.c. once weekly <input type="checkbox"/> 1.5 mg* s.c. once weekly	<input type="checkbox"/> <b>Liraglutide</b> (Victoza®) <input type="checkbox"/> 0.6 mg s.c. OD <input type="checkbox"/> 1.2 mg s.c. OD <input type="checkbox"/> 1.8 mg* s.c. OD	<input type="checkbox"/> <b>Semaglutide</b> (Ozempic®) <input type="checkbox"/> 0.25 mg s.c. once weekly <input type="checkbox"/> 0.5 mg* s.c. once weekly <input type="checkbox"/> 1 mg* s.c. once weekly <input type="checkbox"/> 2 mg* s.c. once weekly	
		<b>SGLT-2 INHIBITOR</b> (not indicated if type 1 diabetes)			
		<input type="checkbox"/> <b>Canagliflozin</b> (Invokana®) <input type="checkbox"/> 100 mg* OD <input type="checkbox"/> 300 mg* OD	<input type="checkbox"/> <b>Dapagliflozin</b> (Forxiga®) <input type="checkbox"/> 5 mg OD <input type="checkbox"/> 10 mg* OD	<input type="checkbox"/> <b>Empagliflozin</b> (Jardiance®) <input type="checkbox"/> 10 mg* OD <input type="checkbox"/> 25 mg* OD	
<b>Does the patient have ASCVD?</b> – Cardiac ischemia (silent or overt) – Peripheral arterial disease – Cerebrovascular/ carotid disease	<b>Statin + ACEI or ARB + GLP-1ra and/or SGLT-2i + ASA</b>	<b>ANTI-PLATELET</b> (if CVD)			
YES →		<input type="checkbox"/> <b>ASA</b> <input type="checkbox"/> 81 mg OD <input type="checkbox"/> 162 mg OD	<input type="checkbox"/> <b>Clopidogrel</b> (Plavix®) for those unable to tolerate ASA <input type="checkbox"/> 75 mg OD		

Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Date: \_\_\_\_\_

License #: \_\_\_\_\_

† CV Risk Factors indicating ACEI or ARB: Hypertension; TC >5.2 mmol/L; HDL-C <0.9 mmol/L; Albuminuria; smoking

‡ CV Risk Factors indicating GLP-1ra: Smoking (Tobacco use); Hypertension (Untreated SBP ≥140 mmHg or DBP ≥95 mmHg, or current anti-hypertensive therapy); Dyslipidemia (Untreated LDL ≥3.4 mmol/L OR HDL-C <1.0 mmol/L (men) <1.3 mmol/L (women) OR triglyceride ≥2.3 mmol/L, or current lipid-lowering therapy; Central obesity

## Cardiovascular protection targets & precautions for people with diabetes

### People with diabetes should be started on cardiovascular / renal protection agents.

The following are suggestions for consideration in cardiovascular / renal protection.

Clinical judgment must always be used when applying these recommendations in practice to support individualized care.

**Lipid targets:** LDL-cholesterol <2.0 mmol/L or >50% reduction from baseline; Non-HDL <2.6 mmol/L; Apolipoprotein B <0.8 g/L

**BP targets:** <130/80 mmHg

**BG targets:** A1C ≤ 7.0% implemented early in the course of diabetes. For type 2 diabetes, consider A1C ≤6.5% to ↓ risk of CKD and retinopathy. If on insulin or insulin secretagogue, assess for hypoglycemia and ensure driving safety. If using continuous glucose monitoring (CGM), recommended glucose metrics may be individualized.

### Angiotensin Converting Enzyme Inhibitor (ACEi) & Angiotensin II Receptor Blocker (ARB) are used to reduce CV / renal risk in adults with type 1 or type 2 diabetes with any of the following:

a) Clinical cardiovascular disease (CVD);

b) Age >55 years with additional CV risk factors or

c) End organ damage (albuminuria, retinopathy, left ventricular hypertrophy), microvascular complications

Precautions: hypersensitivity; previous angioedema associated with ACEi therapy; impaired renal function; hyperkalemia; renal artery stenosis (bilateral or unilateral with a solitary functioning kidney); concomitant NSAID hypovolemia or dehydration; primary hyperaldosteronism; pregnancy or breastfeeding.

**NOTE: among women with childbearing potential, ACEi, ARBs or statins should only be used if there is reliable contraception**

**STATIN** therapy should be used to reduce CV / renal risk in adults with type 1 or type 2 diabetes with any of the following:

a) Clinical CVD;

b) age ≥40 years;

c) age <40 years and 1 of the following: (i) diabetes duration >15 years and age >30; (ii) microvascular complications

Precautions: Impaired renal and hepatic function are risk factors for adverse effects with statins, e.g. rhabdomyolysis. Active liver disease or unexplained transaminase elevations are contraindications to all statins.

**NOTE: among women with childbearing potential, ACEi, ARBs or statins should only be used if there is reliable contraception**

### ANTIPLATELET

In people with established CVD, low dose ASA therapy (81 - 162 mg) should be used to prevent CV events

ASA should not be used routinely for the primary prevention of CVD events

Clopidogrel 75 mg may be used in people unable to tolerate ASA

Precautions: risk of stomach ulcers or bleeding

### SGLT-2 inhibitor or GLP-1 receptor agonist with demonstrated CV / renal benefit:

**SGLT-2 Precautions:** See renal chart for use in renal impairment. Blood-glucose lowering decreases when GFR <45 mL/min/1.73m<sup>2</sup>. Monitor for DKA at lower-than-expected glucose levels. Hold SGLT2i if unable to stay hydrated. Encourage 1 - 1.5L of sugar-free fluid intake per day. Increased risk of UTI and yeast infections.

**GLP-1 RA precautions:** GI adverse effects, i.e. nausea, diarrhea/constipation, vomiting, can often be mitigated with attention to food choices; consider decrease insulin secretagogues and/or insulin to minimize risk of hypoglycemia; Warning: pancreatitis, pancreatic cancer, can increase HR by 7-8 bpm & prolong PR interval by 10 ms, if history of diabetic retinopathy, monitor for progression. Contraindicated in personal or family history of medullary thyroid carcinoma (MTC), multiple endocrine neoplasia syndrome in type 2 (MEN 2), and pregnancy or breastfeeding.

### Physical Activity

Physical activity is associated with improvement in CV outcomes and a reduction in CV and overall mortality in people with type 2 diabetes or Impaired Glucose Tolerance (IGT) and CVD.

Habitual, prolonged sitting is associated with increased risk of death and major CV events. People with diabetes should ideally accumulate a minimum of 150 minutes of moderate- to vigorous-intensity aerobic exercise each week, spread over at least 3 days of the week, with no more than 2 consecutive days without exercise, to improve glycemic control and to reduce risk of CVD and overall mortality.

### Healthy Eating

To reduce the risk of CVD, adults with diabetes should avoid trans fatty acids and consume less than 9% of total daily energy from saturated fatty acids replacing these fatty acids with polyunsaturated fatty acids, monounsaturated fatty acids, whole grains or low-Glycemic Index carbohydrates. The Mediterranean style diet and DASH diet have been shown to help manage diabetes and cardiovascular disease. Lower carbohydrate diets have been shown to reduce A1C and weight, amongst other benefits.