2013 Clinical Practice Guidelines

Quick Reference Guide

(Updated November 2016)

Canadian Diabetes Association

guidelines.diabetes.ca

diabetes.ca | 1-800-BANTING (226-8464)

Copyright © 2016 Canadian Diabetes Association

416569-16

SCREENING & DIAGNOSIS

Who to screen and what do you screen with?

Screen every 3 years in individuals ≥40 years of age or in individuals at high risk using a risk calculator.

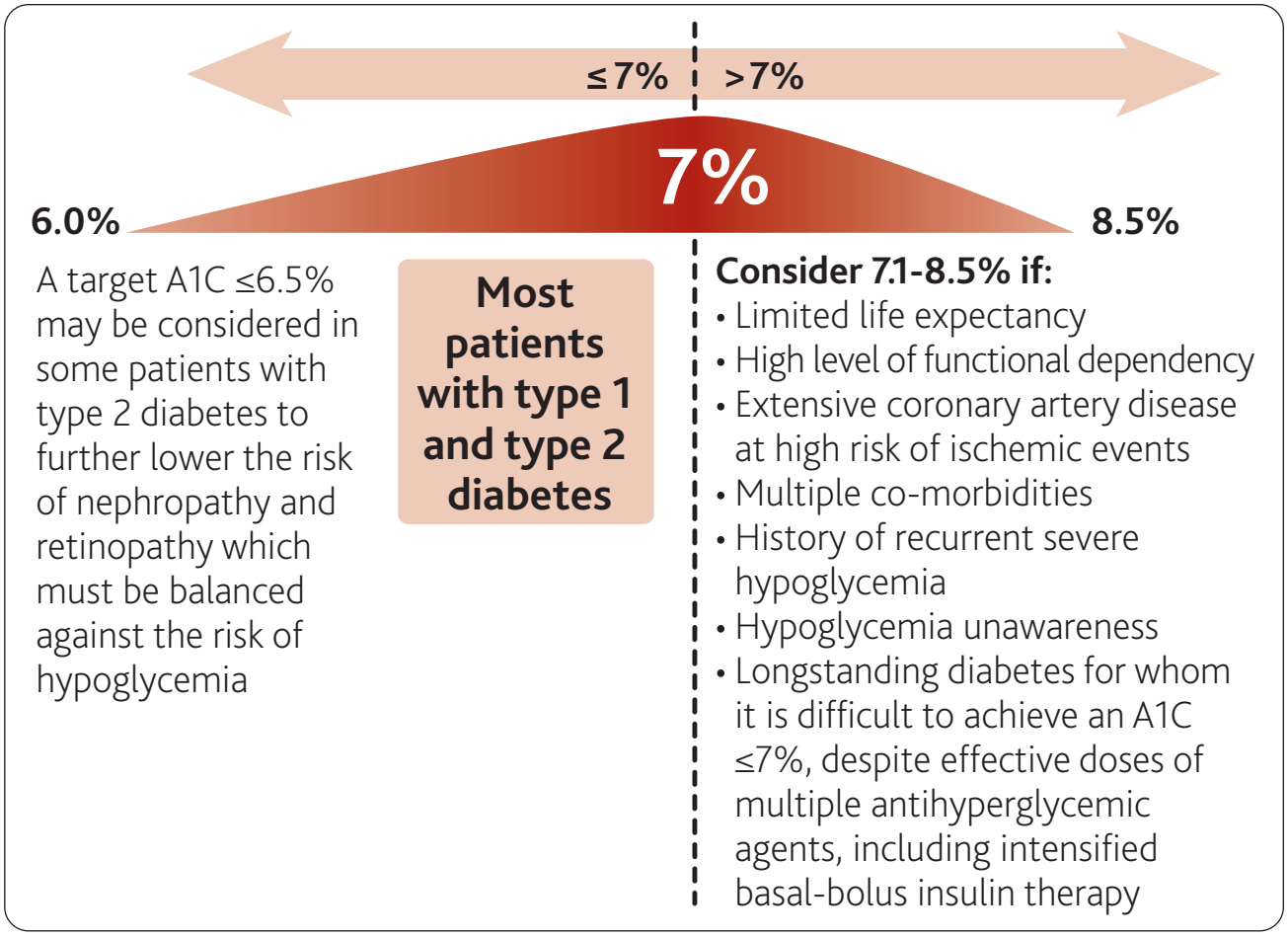
Screen earlier and/or more frequently in people with additional risk factors for diabetes or for those at very high risk using a risk calculator.

DIAGNOSIS OF PREDIABETES & DIABETES

Test	Result	Dysglycemia category
FPG (mmol/L) No caloric intake for at least 8 hours	6.1 – 6.9	IFG
	≥7.0	Diabetes
2hPG in a 75 g OGTT (mmol/L)	7.8 – 11.0	IGT
	≥11.1	Diabetes
A1C (%) Standardized, validated assay, in the absence of factors that affect the accuracy of A1C and not for suspected type 1 diabetes	6.0 – 6.4	Prediabetes
	≥6.5	Diabetes
Random PG (mmol/L)	≥11.1	Diabetes

If asymptomatic, a repeat confirmatory test (FPG, A1C, or a 2hrPG in a 75 g OGTT) must be done. If symptomatic, diagnosis made, and begin treatment.

WHAT A1C SHOULD I TARGET?



A target A1C ≤6.5% may be considered in some patients with type 2 diabetes to further lower the risk of nephropathy and retinopathy which must be balanced against the risk of hypoglycemia

Most patients with type 1 and type 2 diabetes

Consider 7.1-8.5% if:

- Limited life expectancy
- High level of functional dependency
- Extensive coronary artery disease at high risk of ischemic events
- Multiple co-morbidities
- History of recurrent severe hypoglycemia
- Hypoglycemia unawareness
- Longstanding diabetes for whom it is difficult to achieve an A1C ≤7%, despite effective doses of multiple antihyperglycemic agents, including intensified basal-bolus insulin therapy

At diagnosis of type 2 diabetes
Start lifestyle intervention (nutrition therapy and physical activity) +/- Metformin

A1C <8.5%	A1C ≥8.5%	Symptomatic hyperglycemia with metabolic decompensation
If not at glycemic target (2-3 mos)	Start metformin immediately. Consider initial combination with another antihyperglycemic agent.	Initiate insulin +/- metformin
Start/Increase metformin	If not at glycemic targets	

Add another agent best suited to the individual by prioritizing patient characteristics:

PATIENT CHARACTERISTIC	CHOICE OF AGENT
Priority: Clinical cardiovascular disease →	Antihyperglycemic agent with demonstrated CV outcome benefit (empagliflozin, liraglutide)
• Degree of hyperglycemia • Risk of hypoglycemia • Overweight or obesity • Cardiovascular disease or multiple risk factors • Comorbidities (renal, CHF, hepatic) • Preferences & access to treatment	• Consider relative A1C lowering • Rare hypoglycemia • Weight loss or weight neutral • Effect on cardiovascular outcome • See therapeutic considerations, consider eGFR • See cost column; consider access

Add another class of agent best suited to the individual (classes listed in alphabetical order):

Class	Relative A1C Lowering	Hypo-glycemia	Weight	Effect in Cardiovascular Outcome Trial	Other therapeutic considerations	Cost
Alpha-glucosi-dase inhibitor (acarbose)	↓	Rare	Neutral to ↓		Improved postprandial control, GI side-effects	$$
DPP-4 Inhibitors	↓↓	Rare	Neutral to ↓	alo, saxa, sita: Neutral	Caution with saxagliptin in heart failure	$$$
GLP-1R agonists	↓↓ to ↓↓↓	Rare	↓↓	lira: Superiority in T2DM patients with clinical CVD lixi: Neutral	GI side effects	$$$$
Insulin	↓↓↓	Yes	↑↑	glar: Neutral	No dose ceiling, flexible regimens	$-$$$$
Insulin secretagogue: Meglitinide	↓↓	Yes	↑		Less hypoglycemia in context of missed meals but usually requires TID to QID dosing	$$
Sulfonylurea	↓↓	Yes	↑		Gliclazide and glimepiride associated with less hypoglycemia than glyburide	$
SGLT2 inhibitors	↓↓ to ↓↓↓	Rare	↓↓	empa: Superiority in T2DM patients with clinical CVD	Genital infections, UTI, hypotension, dose-related changes in LDL-C, caution with renal dysfunction and loop diuretics, dapagliflozin not to be used if bladder cancer, rare diabetic ketoacidosis (may occur with no hyperglycemia)	$$$
Thiazolidinedi-ones	↓↓	Rare	↑↑	Neutral	CHF, edema, fractures, rare bladder cancer (pioglitazone), cardiovascular controversy (rosiglitazone), 6-12 weeks required for maximal effect	$$
Weight loss agent (orlistat)	↓	None	↓		GI side effects	$$$

alo=alogliptin; empa=empagliflozin; glar=glargine; lira=liraglutide
lixi=lixisenatide; saxa=saxagliptin; sita=sitagliptin

If not at glycemic targets

• Add another agent from a different class • Add/Intensify insulin regimen

Make timely adjustments to attain target A1C within 3-6 months

LIFESTYLE

RECOMMENDATIONS FOR VASCULAR PROTECTION

For all patients with diabetes:

The ABCDEs

A **A1C** – optimal glycemic control (usually ≤7%)

B **BP** – optimal blood pressure control (<130/80 mmHg)

C **Cholesterol** – LDL-C ≤2.0 mmol/L if decision made to treat

D **Drugs** to protect the heart (see algorithm)

- **A** – ACEi or ARB
- **S** – Statin
- **A** – ASA if indicated

E **Exercise/Eating** – regular physical activity, healthy diet, achievement and maintenance of healthy body weight

S **Smoking** cessation

See next panel for algorithm.

Does this patient require vascular protective medications?

STEP 1: Does the patient have end organ damage?

☐ Macrovascular disease
- Cardiac ischemia (silent or overt)
- Peripheral arterial disease
- Cerebrovascular/Carotid disease

OR

☐ Microvascular disease
- Retinopathy
- Nephropathy (ACR ≥2.0)
- Neuropathy

YES → **STATIN*** + **ACEi or ARB#** + **ASA** (Clopidrogrel if ASA-intolerant)

YES → **STATIN*** + **ACEi or ARB#**

NO

STEP 2: What is the patient's age?

☐ ≥55 years

YES → **STATIN*** + **ACEi or ARB#**

OR

☐ 40-54 years

YES → **STATIN***

NO

STEP 3: Does the patient…

☐ Have diabetes >15 years AND age >30 years

☐ Warrant statin therapy based on the 2012 Canadian Cardiovascular Society Lipid Guidelines

YES → **STATIN***

See next panels for recommendations on vascular protection, women of childbearing age, and the frail elderly.

* Dose adjustments or additional lipid therapy warranted if lipid target (LDL-C ≤2.0 mmol/L) not being met.

ACE-inhibitor or ARB (angiotensin receptor blocker) should be given at doses that have demonstrated vascular protection [eg. perindopril 8 mg once daily (EUROPA trial), ramipril 10 mg once daily (HOPE trial), telmisartan 80 mg once daily (ONTARGET trial)].

ASA should not be used for the primary prevention of cardiovascular disease in people with diabetes. ASA may be used for secondary prevention.

SPECIAL POPULATIONS

In women of childbearing age (type 1 or type 2 diabetes)…

- Discuss pregnancy plans at **every visit**
- Pregnancies **should be planned**
- **Prior to conception**
  - **A1C ≤7.0%**
  - **Start…**
    - **Folic acid** 5 mg per day x 3 months preconception
  - **Stop…**
    - **Non-insulin antihyperglycemic agents** (except metformin in women with polycystic ovarian syndrome)
    - **Statins**
    - **ACEi or ARB** either prior to or upon detection of pregnancy
  - **Screen for complications** (eye appointment, urine ACR)

SPECIAL POPULATIONS

In the frail elderly or those with limited life expectancy…

- Potential benefits of treatment must be balanced against the potential risks of harm (eg. hypoglycemia, hypotension, falls)
- Target A1C ≤8.5%

PROMOTE SELF-MANAGEMENT

Self-Management Education (SME) should be discussed at every diabetes-focused visit and individualized according to type of diabetes, patient ability, and motivation for learning and change

Set S.M.A.R.T. Goals

Specific **M**easurable **A**chievable **R**ealistic **T**imely

Self-Management Areas of Focus	Collaborate with your patient to create an action plan on their identified area of focus
Diabetes Education	Enable timely, culturally and literacy appropriate diabetes education and resources
Nutrition	Encourage to follow *Eating Well with Canada's Food Guide* and refer for dietary counseling
Physical Activity	Minimum 150 minutes aerobic activity per week and resistance exercise 2-3 times per week
Weight loss (5 - 10% of initial weight)	Can substantially improve glycemic control and cardiovascular disease risk factors in overweight patients
Medication	Counsel about adherence (dose, timing, frequency), anticipated effects, and mechanism of action
Hypoglycemia	Counsel about the prevention, recognition, and treatment of drug-induced hypoglycemia
Self-Monitoring Blood Glucose (SMBG)	**Not on insulin:** Individualized to type of antihyperglycemic agents, level of control, and risk of hypoglycemia
	On insulin only once a day: SMBG ≥ once a day at variable times
	On insulin > once a day: SMBG ≥ 3 times per day including pre- and post-prandial values
Foot Care	Educate on proper foot care including daily foot inspection
Mental Health & Mood Disorders	Screen for depressive and anxious symptoms by interview or a standardized questionnaire (eg. PHQ-9) www.phqscreeners.com
Smoking Cessation	Include formal smoking prevention and cessation counseling

PATIENT SME ACTION PLAN

- **Date:**
- **The change I want to make happen is:**
- **My goal for the next month is:**
- **Action Plan:** The specific steps I will take to reach my goal (what, when, where, how often):
- **Things that could make it difficult to achieve my goal:**
- **My plan for overcoming these challenges are:**
- **Support and resources I will need:**
- **How <u>important</u> is it to me that I achieve my goal?** (scale of 0 to 10, with 0 being not important at all and 10 being extremely important):
- **How <u>confident</u> am I that I can achieve my goal?** (scale of 0 to 10, with 0 being not confident at all and 10 being extremely confident):
- **Review date:**

TEAM CARE & ORGANIZATION OF CARE

The Five 'Rs'

Recognize:
Consider diabetes risk factors for all of your patients and screen appropriately for diabetes.

Register:
Develop a registry or a method of tracking all your patients with diabetes.

Resource:
Support self-management through the use of interprofessional teams which could include the primary care provider, diabetes educator nurse, pharmacist, dietitian, and other specialists.

Relay:
Facilitate information sharing between the person with diabetes and team members for coordinated care and timely management change.

Recall:
Develop a system to remind your patients and caregivers of timely review and reassessment of targets and risk of complications.

Unrestricted educational grant funding for this resource was provided by Janssen Inc., Novo Nordisk Canada Inc., Boehringer Ingelheim Canada /Eli Lilly Canada Alliance, Sanofi Canada, Bristol-Myers Squibb and AstraZeneca, Merck Canada Inc., Takeda Canada Inc., and MEDEC (Diabetes Committee). The Canadian Diabetes Association thanks these organizations for their commitment to diabetes in Canada.
Copyright © 2016 Canadian Diabetes Association