Screening and Diagnosis

≥40 years old or CANRISK High Risk	q3 years
CANRISK Very High Risk or Individuals with additional Risk Factors	Earlier or more frequent screening q6-12 months

	Normal	Pre-Diabetes	**Diabetes**
A1C	< 5.5%	6.0-6.4 %	**≥ 6.5%**
FPG	<5.6	6.1-6.9 Impaired fasting glucose (IFG)	**≥ 7.0**
OGTT		7.8 – 11.0 Impaired glucose tolerance (IGT)	**≥ 11.1**
Random PG			**≥ 11.1**

If FPG and A1C available but discordant, use higher test

More frequent screening

No Symptoms → Redo Test to confirm → Diabetes Diagnosis

Symptoms → Diabetes Diagnosis

If initial test random glucose test, confirmatory test must be FPG, A1C or OFTT

Risk Factors

Age >= 40
1st degree relative with DM2
High risk population (Aboriginal, Asian, South Asian, African, Hispanic)
History IFG, IGT
Presence of complications associated with DM
Presence of vascular risk factors (Dyslipidemia, Hypertension, Overweight, Abdominal obesity)
Gestational Diabetes OR macrosomic infant
Secondary Causes
- Endocrinopathies (Cushing Syndrome, PCOS)
- Pancreatic Disease (CF, pancreatitis)
- Infections (CMV, Rubella)

Medications (Glucocorticoids, Atypical antipsychotics, HAART)

Symptoms

Polydipsia, Polyuria, Polyphagia, Weightloss

Type 2 Diabetes

3 months no control

Lifestyle Modifications (Diet and Exercise) → Start Oral Hypoglycemic → Start Second Oral Hypoglycemic → Start Basal Insulin qhs → Start Post-Prandial Insulin → Disease Progression

First Line: Metformin

Starting: 500 mg PO BID or 850 mg daily
Maintenance: 850 - 2550 mg/day

Adjustments +/- Additional agents should be instituted to achieve target A1C within 3 to 6 months

A1C ≥1.5% above target, start medication and lifestyle right away

Long
NPH
Glargine (Lantus)
Detemir (Levemir)

0.1 – 0.2 Units/kg/day SC
Titrate by 10% q3-4 until AM FBS 4-7 mmol/L

D/C Secretagogues after starting insulin

Symptomatic hyperglycemia or Metabolic Decompensation, start insulin and oral hypoglycemic

Short (Before Meal)
Regular (R)
Toronto

Rapid (after meal)
Lispro (Humalog)
Aspart (NovoRapid)

Total Dose 0.5 Units/kg
40% Basal
60% Prandial (20% TID)

A1C measured q3-6 months
SMBG based on individual

SMBG daily

SMBG TID

Measurements

Targets

7.1 – 8.5 %	Recurrent severe hypoglycemia Limited life expectancy Frail elderly ± with dementia
7.1 – 8.0 %	Functionally dependent
≤ 7.0 %	Most adults
≤ 6.5 %	Reduces Risk of Complications

Hypoglycemia

Mild-to-moderate: oral ingestion of 15 g carbohydrate. Retest BG in 15 minutes and re-treat with another 15 g carbohydrate if BG level remains <4.0 mmol/L. If a meal is >1 hour away, a snack (15 g carbohydrate and a protein source) should be consumed.

Hyperglycemia

hyperosmolar hyperglycemic state (HHS) and DKA (rare)

Age 40

Start Statin
Clinical CVD
Age ≥40 years
Age <40 years and 1 of the following:
Diabetes duration >15 years and age >30 years]
Microvascular complications

Warrants therapy based on the presence of other CV risk factors according to the 2016 Canadian Cardiovascular Society Guidelines for the Diagnosis and Treatment of Dyslipidemia

Age 55

Start ACEi or ARB
Clinical CVD
Age ≥55 years with an additional CV risk factor or end organ damage (albuminuria, retinopathy, left ventricular hypertrophy)
Microvascular complications

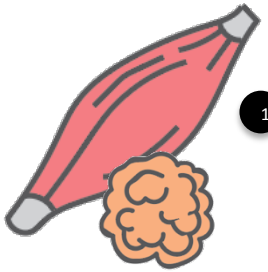
Start Second (eg ezetimibe)

Secondary Prevention
ASA 81–162 mg PO daily

(or Clopidogrel 75 mg PO daily)

	Complication	Parameter	Frequency
Macrovascular	Stroke	Statin, ACEI +/- ASA Baseline ECG	ECG q3-5 years
	MI		
	Peripheral Vascular Disease		
	BP	< 130/80	
	Lipid Profile (TC, HDL-C, TG)	LDL-C <2.0 mmol/L or >50% reduction	q1-3 years (or q3-6 months after starting statins)
Microvascular	Neuropathy	10 g monofilament or loss of sensitivity to vibration at the dorsum of the great toe	qYearly
	Nephropathy Random Urine ACR and Serum Cr (for eGFR).	Normal ACR < 2.0 mg/mmol or eGFR >= 60 mL/min	qYearly if abnormal repeat serum Cr, repeat 2 random urine ACRs in next 3 months. If abnormal then = CKD If ACR > 20.00 mg/mol = CKD
	Retinopathy	Exam by optometrist or opthamologist	At diagnosis and 1–2 years

Oral Hypoglycemics



1 INSULIN SENSITIZER

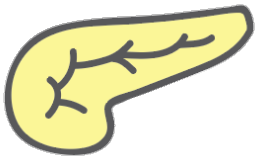
TZD
PPAR gamma agonist
"_glitazone"
Pioglitaxone (Actos)
Rosiglitaxone (Avandia)

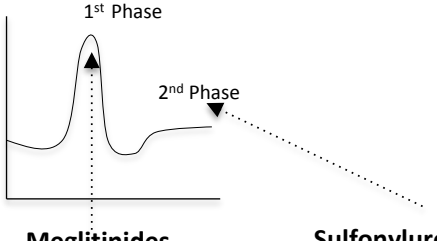
Gluconeogenesis

Biguanides
--| gluconeogenesis

Metformin (Glucophage)
Also ↑ Sensitivity

2 INSULIN SECRETAGOGUES





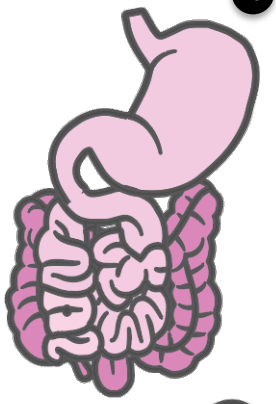
Meglitinides
Stimulate β cells to secrete

Repaglinide (GlucoNorm)

Sulfonylureas
↑ β-cells secretion

Gliclazide (Diamicron)
Glimepiride (Amaryl)
Glyburide (Diabeta)

3 CARB ABSORPTION INHIBITOR



alpha-glucosidase inhibitor
Prevents polysaccharide degradation, slows gut starch absorption

Acarbose (Prandase)

SGLT-2
--| proximal tubuale glucose reabsorption

Canagliflozin (Invokana)

Goal: "Keep GLP around"

4 INCRETIN AGENTS

GLP-1 agonists
Inhibit gastric emptying…↑ insulin secretion

Dulaglutide (Trulicity)
Exenatide (Byetta)
Exenatide QW (Bydureon)
Liraglutide (Victroza)
Lixisenatide (Adlyxin)

DPP-4 Inhibitors
Prevents GLP breakdown by inhibiting DPP-4 ENZ

"__gliptin"
Sitagliptin (Januvia)
Linogliptin (Trajenta)