Special considerations in stroke prevention

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March 7 , 2024

Outline

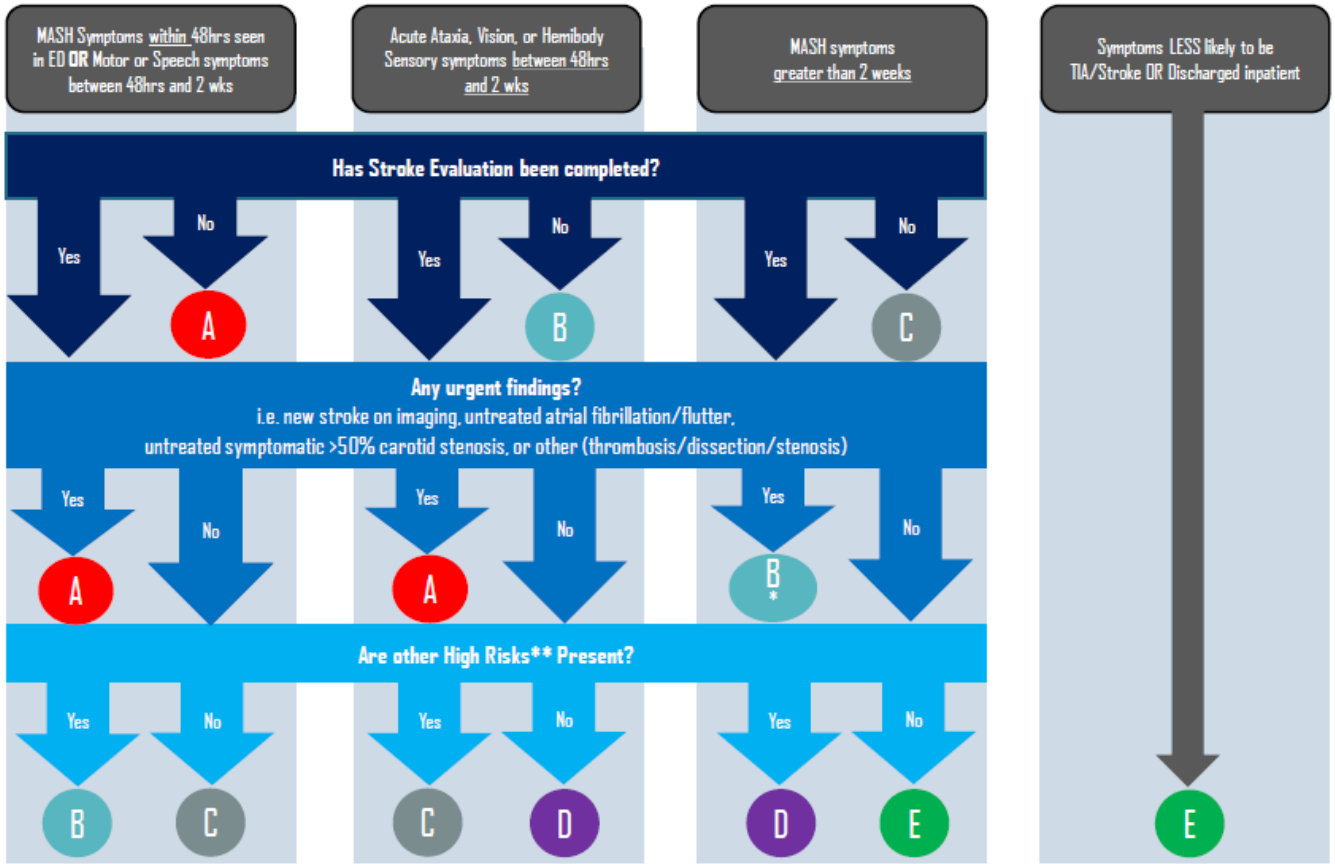
- Vascular Protection Clinic
- Review of stroke risk factors
- Focus on management
  - Hypertension
  - Dyslipidemia
  - Carotid disease
  - Atrial fibrillation

Vascular Protection Clinic

- Perth hospital site
- Staff:
  - 2 General internists
  - 1 Nurse
  - 1 Dietician
  - 1-2 Volunteers
- Schedule:
  - First appointment – Wednesday afternoons
  - Follow up appointments - telephone

Ontario Triage Algorithm for Stroke Prevention Clinic Referrals

Patients with TIA or Non Disabling Stroke Symptoms



Adapted from Northwestern Ontario Regional Stroke Network & Thunder Bay Regional Health Sciences Centre Source: Canadian Stroke Best Practice Recommendations (2020; 2017) & References (See Appendix)
Updated by Ontario Secondary Stroke Prevention Task Group (May, 2022)

* If untreated atrial fibrillation/flutter-implement plan for anticoagulation ASAP
** See over for other high risks

New Acute TIA / Stroke Symptoms → **Within 48 hrs and no ED Visit** → **Advise to go to CT-capable ED Immediately**

Stroke Symptoms - MASH
likely TIA or minor stroke (transient, fluctuating) & if persistent, increase triage scale or admit

MOTOR (Unilateral weakness: face or arm or leg)
ACUTE ATAXIA or VISION CHANGE (monocular or hemifield vision loss or diplopia)
SPEECH (dysarthric or dysphasia/aphasia)
HEMIBODY SENSORY (unilateral numbness: face/arm or arm/leg)

Stroke Evaluation

- Head Imaging
- Vascular Imaging
- Cardiac Monitoring (ECG or Holter or Loop)
- Antiplatelet or Anticoagulation started

Triage Scale
Time frame to be seen at SPC from date of referral sent

- A — Within 24hrs (ED or SPC Fast Track) *(emergent)*
- B — Within 1 Week (*urgent/high*)
- C — Within 2 Weeks (*moderate*)
- D — Within 1 Month (*low*)
- E — Within 3 Months *(discharge inpatients / less likely to be TIA/stroke but still may need attention)*

Other High Risks to Consider:**
Higher priority for those based on:

- Symptoms
  - Longer duration of symptoms
  - MASH stroke symptoms occurring > 2 weeks [with time the priority diminishes (e.g., 2 weeks vs > 3 months)]
  - Warrants OT/PT/SLP assessment
- Other vascular conditions
- Previous TIA/stroke
- Pregnancy including post-partum
- Cancer
- Vascular risk factors
- Already on Antiplatelet/Anticoagulation therapy
- Blood pressure reading is high (e.g., initial triage diastolic blood pressure ≥ 110 mmHg as per Canadian TIA Score)
- Abnormal blood work (e.g., Glucose ≥ 15 mmol/L &Platelet count ≥ 400 x 10^9/L as per Canadian TIA Score)
- High Canadian TIA Score ≥ 9
- Other considerations:
  - Lifestyle risks
  - Age (younger)
  - Ethnicity
  - Family history

Not likely to be a TIA

- Transient symptoms lasting only seconds
- Seizure
- Isolated transient loss of consciousness or syncope
- Transient global amnesia
- Isolated non-vertiginous dizziness
- Vague generalized weakness without loss of power

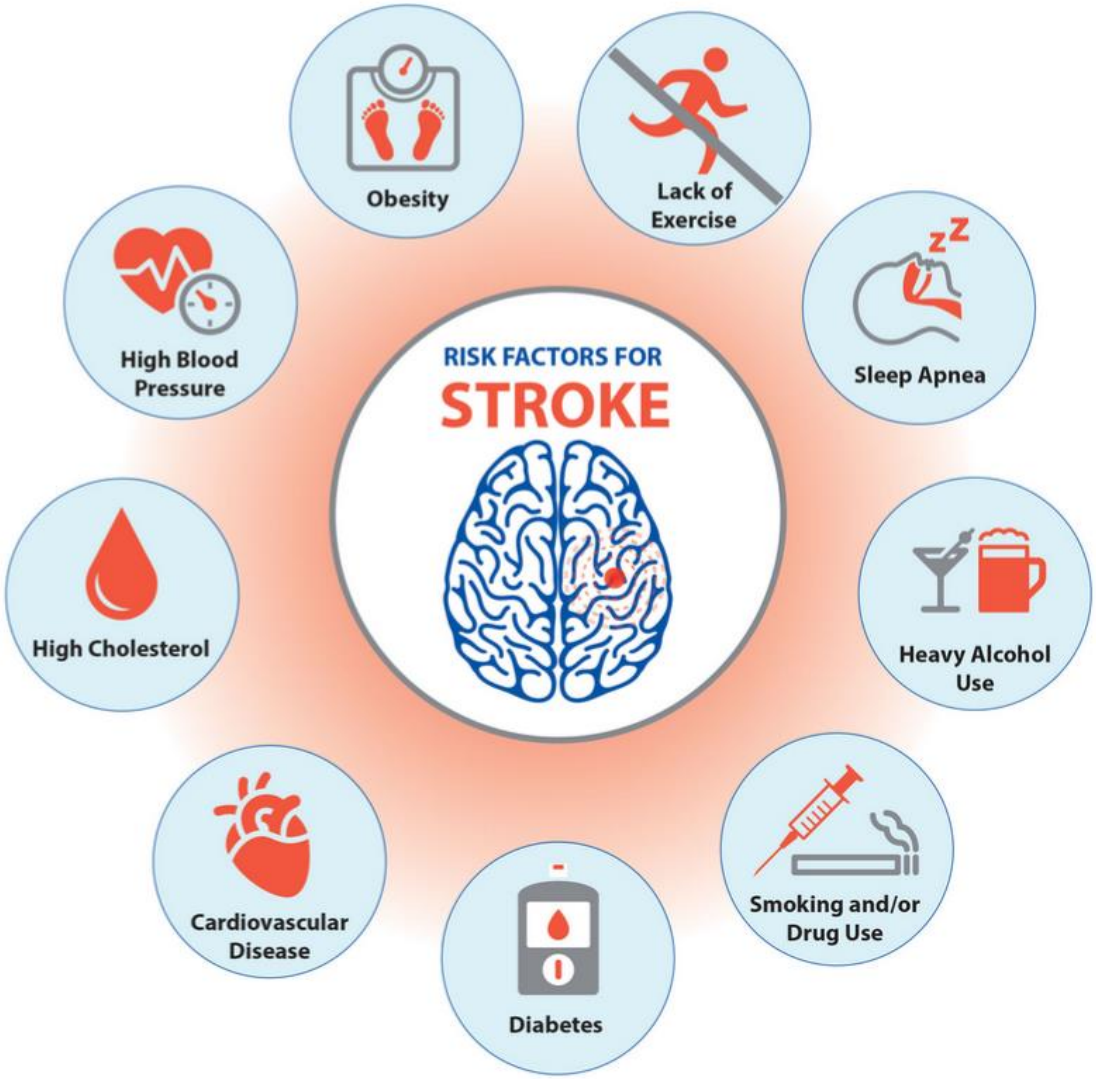
OR

No other focal neurological findings

Defer back to referral source or primary care physician for follow up or as per internal processes

VPC Work up

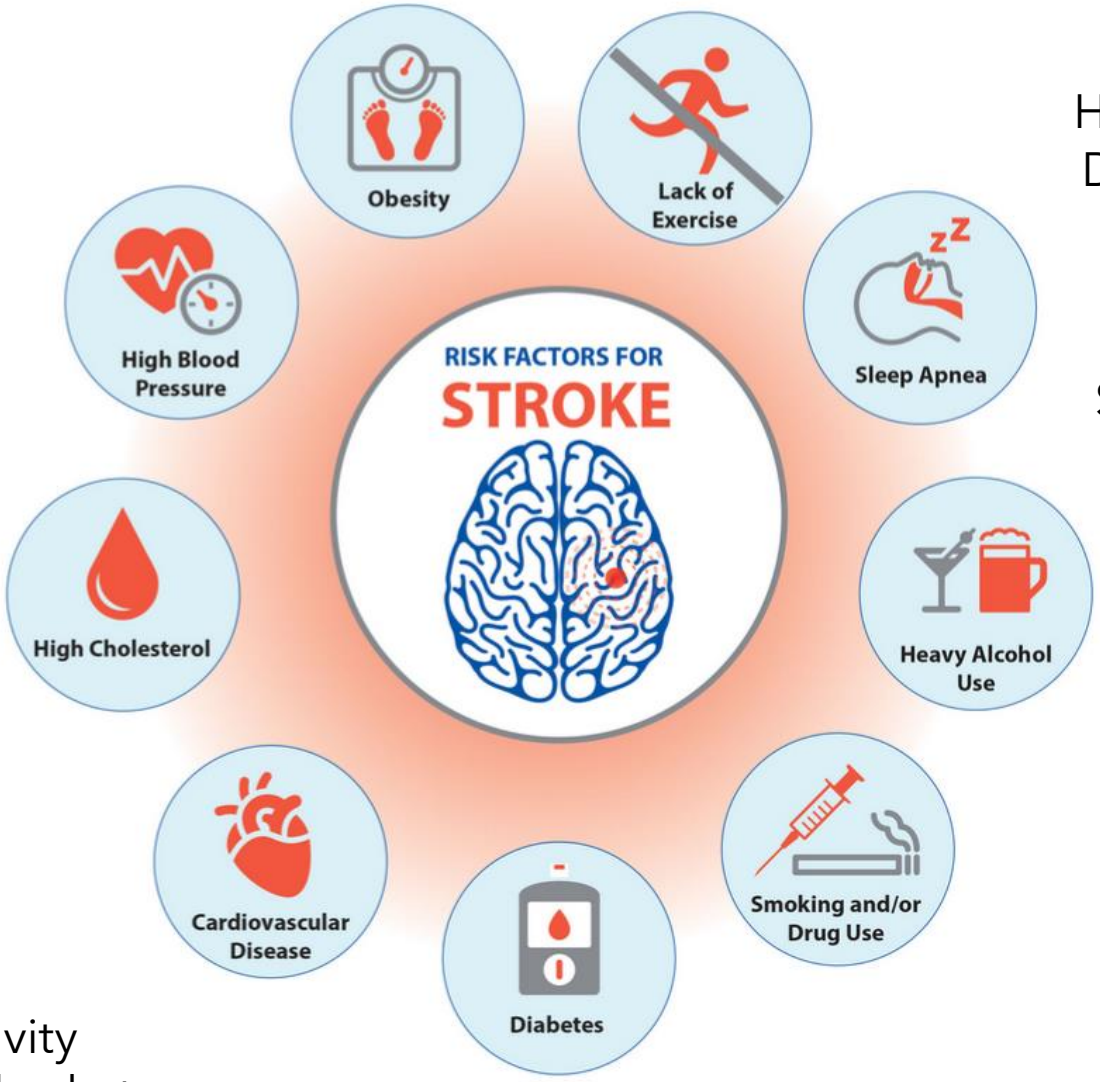
Brain imaging	CT or CTA +/- MRI
Carotid imaging	CTA Carotid doppler
Echocardiogram	Trans-thoracic +/- Trans-esophageal
Holter monitors	48 hour 14 day
Blood work	Lipid panel HbA1c CBC, lytes, creat, ALT, CRP


RISK FACTORS FOR
STROKE
Obesity
Lack of Exercise
Sleep Apnea
Heavy Alcohol Use
Smoking and/or Drug Use
Diabetes
Cardiovascular Disease
High Cholesterol
High Blood Pressure

Conditions

Hypertension
Dyslipidemia
Diabetes
Arrhythmia
Obesity
Sleep apnea

Pregnancy
OCP/HRT



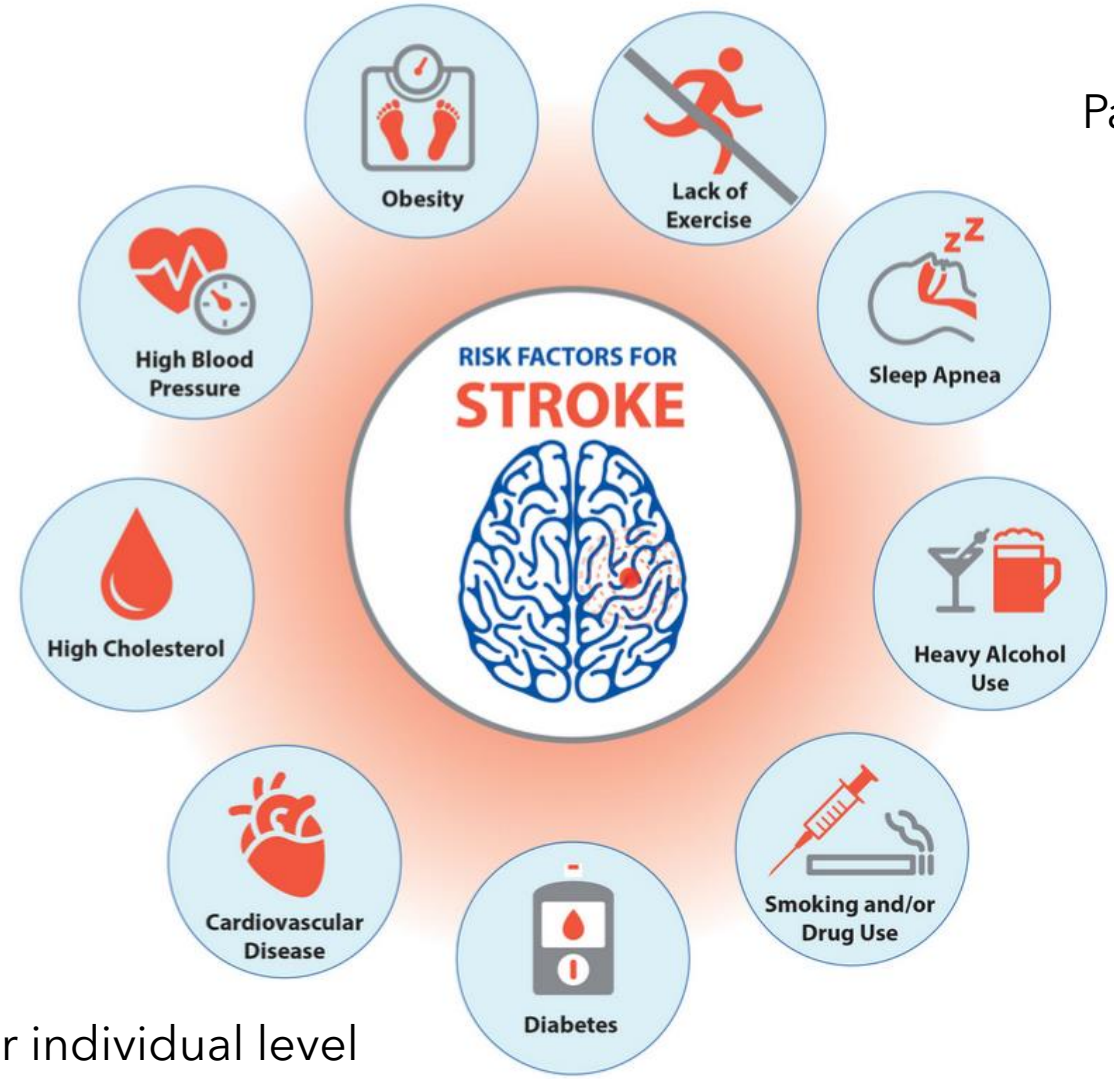
Lifestyle

Diet
Stress
Smoking
Physical activity
Alcohol and substance use

Secondary

Patient-based

CVA/TIA
CAD
HF
Arrhythmia
PVD
Dementia



Primary

Population or individual level
Preventing the initial occurrence

Targets for lifestyle modification

Diet

- Balanced diet
- Limited processed foods
- Limiting sodium
- DASH or Mediterranean diets

Exercise

- At least 150 minutes per week
- In bouts of 10 minutes or more
- Moderate- to vigorous intensity aerobic physical activity

Smoking / Substances

Cessation

Alcohol consumption per week

Drinking alcohol has negative consequences. The more alcohol you drink per week, the more the consequences add up.

https://www.ccsa.ca/canadas-guidance-alcohol-and-health

Hypertension

Most prevalent CV risk factor in Canada

Figure 1

Managing **Hypertension**

1 When to start a drug and what to aim for?

The threshold to start a drug may be different from the blood pressure goal for a patient on drug therapy

	Primary Prevention & Lower Risk	Secondary Prevention & Higher Risk	Diabetes
Who is included	• No history of heart disease, heart attack, heart failure, or stroke	• History of heart attack/stroke OR • 10-year Framingham CV risk score >15%	• Type 1 • Type 2
When to start a drug (threshold)	• >160/100 mmHg (Grade A)	• >140/90 mmHg (SBP Grade C; DBP Grade A)	• >130/80 mmHg (Grade C)
What to aim for (goal)	• <140/90 mmHg (Grade A)	• <140/90 mmHg (Grade A)	• <130/80 mmHg (Grade C)

Table is based on the 2018 Hypertension Canada guidelines. SBP (systolic), DBP (diastolic). Grade A evidence: strong evidence; Grade B evidence: moderate evidence; Grade C evidence: weak evidence.

Some patients with specific cardiovascular risk factors may opt for a more intensive systolic BP goal of 120 mmHg (Grade B)

Help patients choose a threshold and goal based on their preferences, medical history, and frailty

Consider waiting if there is a short-term cause of hypertension (e.g., pain, stress, trauma)

Table 5. Blood pressure thresholds for initiation of antihypertensive therapy and treatment targets in adults

Patient population	BP threshold (mm Hg) for initiation of antihypertensive therapy	BP target (mm Hg) for treatment
Low risk (no target organ damage or cardiovascular risk factors)	SBP $\geq$ 160 (Grade A) DBP $\geq$ 100 (Grade A)	SBP $<$ 140 (Grade A) DBP $<$ 90 (Grade A)
High risk of cardiovascular disease*	SBP $\geq$ 130 (Grade B)	SBP $<$ 120 (Grade B)
Diabetes mellitus	SBP $\geq$ 130 (Grade C) DBP $\geq$ 80 (Grade A)	SBP $<$ 130 (Grade C) DBP $<$ 80 (Grade A)
All others	SBP $\geq$ 140 (Grade C) DBP $\geq$ 90 (Grade A)	SBP $<$ 140 (Grade A) DBP $<$ 90 (Grade A)

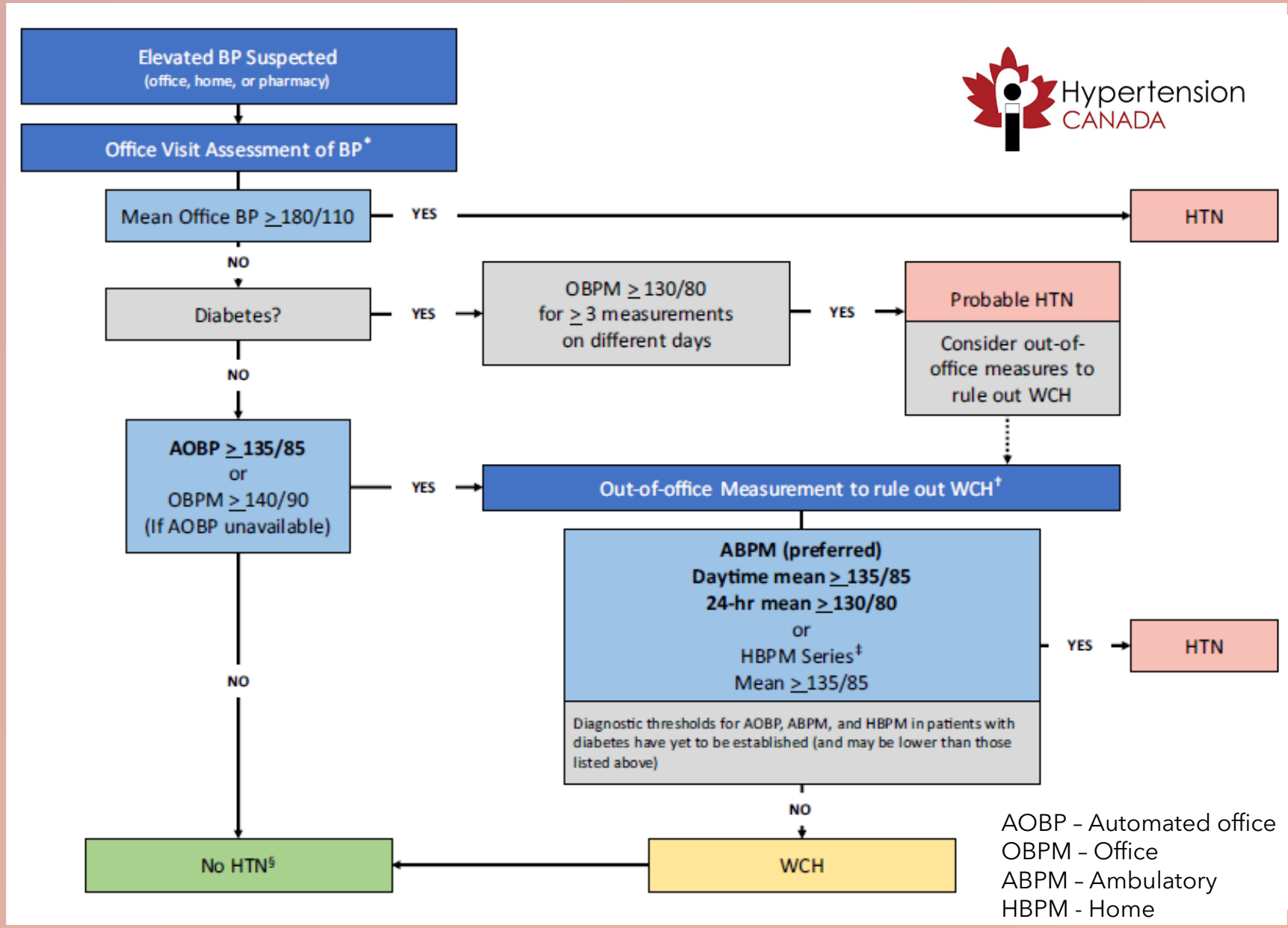
BP, blood pressure; DBP, diastolic blood pressure; SBP, systolic blood pressure.

*See Table 6; on the bass of automated office blood pressure measurement.

Hypertension CANADA

High risk

- Clinical or subclinical CV disease
- CKD / proteinuria
- 10y CV risk >15%
- Age >75y



AOBP – Automated office
OBPM – Office
ABPM – Ambulatory
HBPM - Home

2023 ESH Guidelines for the management of arterial hypertension

European Society of Hypertension

Hypertension disease staging	Other risk factors, HMOD, CVD or CKD	BP (mmHg) grading			
		High-normal SBP 130–139 DBP 85–89	Grade 1 SBP 140–159 DBP 90–99	Grade 2 SBP 160–179 DBP 100–109	Grade 3 SBP ≥ 180 DBP ≥ 110
Stage 1	No other risk factors[a]	Low risk	Low risk	Moderate risk	High risk
	1 or 2 risk factors	Low risk	Moderate risk	Moderate to high risk	High risk
	≥3 risk factors	Low to moderate risk	Moderate to high risk	High risk	High risk
Stage 2	HMOD, CKD grade 3, or diabetes mellitus	Moderate to high risk	High risk	High risk	Very high risk
Stage 3	Established CVD or CKD grade ≥4	Very high risk	Very high risk	Very high risk	Very high risk

	<50 years	60–69 years	≥70 years
	<2.5%	<5%	<7.5%
	2.5 to <7.5%	5 to <10%	7.5 to <15%
	≥7.5%	≥10%	≥15%

Complementary risk estimation in Stage 1 with SCORE2/SCOR2-OP

FIGURE 4 Cardiovascular risk according to grade and stage of hypertension.

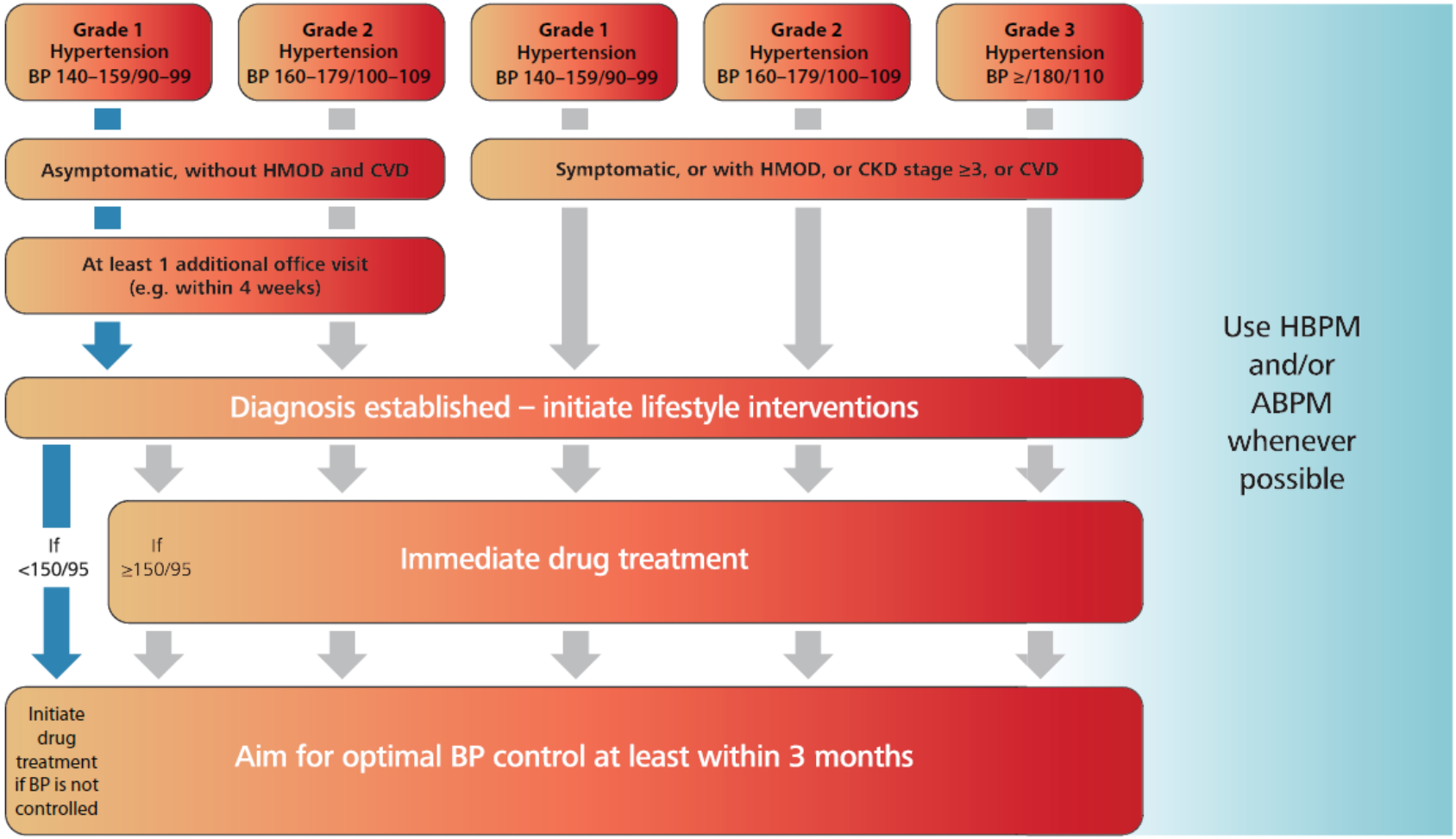


FIGURE 9 Diagnosis by office BP and initial management of hypertension.

European Society of Hypertension

2023 ESH Guidelines for the management of arterial hypertension

The Task Force for the management of arterial hypertension of the European Society of Hypertension

Endorsed by the International Society of Hypertension (ISH) and the European Renal Association (ERA)

Treatment BP targets	Adults 18–79 y, primary SBP/DBP goal <140/90 mm Hg; if treatment well tolerated target SBP/DBP <130/80 mm Hg but not SBP <120 mm Hg or DBP <70 mm Hg. For adults with isolated systolic hypertension, target SBP lowering, albeit cautiously. In adults ≥80 y, target SBP/DBP <140/90 mm Hg, if well tolerated.	Recommendations are like previous ESH Guideline

Table 7. Considerations in the individualization of pharmacological therapy in adults

	Initial therapy	Second-line therapy	Notes and/or cautions
Hypertension without other compelling indications			
Diastolic hypertension with or without systolic hypertension	Monotherapy or SPC. Recommended monotherapy choices include thiazide/thiazide-like diuretics (with longer-acting diuretics preferred), β-blockers, ACE inhibitors, ARBs, or long-acting CCBs. Recommended SPC choices include combinations of an ACE inhibitor with CCB, ARB with CCB, or ACE inhibitor/ARB with a diuretic (consider statins in selected patients)	Combination of first-line drugs	Not recommended for monotherapy: α-blockers, β-blockers in those 60 years of age or older, ACE inhibitors in black people. Hypokalemia should be avoided in those prescribed diuretics. Combination of an ACE inhibitor with an ARB is not recommended
Isolated systolic hypertension without other compelling indications	Thiazide/thiazide-like diuretics, ARBs, or long-acting dihydropyridine CCBs	Combinations of first-line drugs	Same as diastolic hypertension with or without systolic hypertension
Diabetes mellitus			
Diabetes mellitus with microalbuminuria,* renal disease, cardiovascular disease, or additional cardiovascular risk factors	ACE inhibitors or ARBs	Additional use of a dihydropyridine CCB is preferred over a thiazide/thiazide-like diuretic	A loop diuretic could be considered in hypertensive chronic kidney disease patients with extracellular fluid volume overload
Diabetes mellitus not included in the above category	ACE inhibitors, ARBs, dihydropyridine CCBs, or thiazide/thiazide-like diuretics	Combination of first-line drugs. If combination with ACE inhibitor is being considered, a dihydropyridine CCB is preferable to a thiazide/thiazide-like diuretic	Normal urine microalbumin to creatinine ratio < 2.0 mg/mmol
Cardiovascular disease			
Coronary artery disease	ACE inhibitors or ARBs; β-blockers or CCBs for patients with stable angina	When combination therapy is being used for high-risk patients, an ACE inhibitor/dihydropyridine CCB is preferred	Avoid short-acting nifedipine Combination of an ACE inhibitor with an ARB is not recommended. Exercise caution when lowering SBP to target if DBP is ≤ 60 mm Hg, especially in patients with LVH
Recent myocardial infarction	β-Blockers and ACE inhibitors (ARBs if ACE inhibitor-intolerant)	Long-acting CCBs if β-blocker contraindicated or not effective	Nondihydropyridine CCBs should not be used with concomitant heart failure

Table 7. Considerations in the individualization of pharmacological therapy in adults

	Initial therapy	Second-line therapy	Notes and/or cautions
Heart failure	ACE inhibitors (ARBs if ACE inhibitor-intolerant) and β-blockers. Aldosterone antagonists (mineralocorticoid receptor antagonists) may be added for patients with a recent cardiovascular hospitalization, acute myocardial infarction, elevated BNP or NT-proBNP level, or NYHA class II-IV symptoms	ACE inhibitor and ARB combined. Hydralazine/isosorbide dinitrate combination if ACE inhibitor and ARB contraindicated or not tolerated. Thiazide/thiazide-like or loop diuretics are recommended as additive therapy; dihydropyridine CCB can also be used. A combined ARB/neprilysin-inhibitor is recommended (in place of an ACE inhibitor or ARB) in symptomatic patients with hypertension and HFrEF according to standard guideline-based therapies	Titrate doses of ACE inhibitors and ARBs to those used in clinical trials. Carefully monitor potassium and renal function if combining any of ACE inhibitor, ARB, and/or aldosterone antagonist
LVH	ACE inhibitor, ARB, long-acting CCB, or thiazide/thiazide-like diuretic	Combination of first-line agents	Hydralazine and minoxidil should not be used
Past stroke or TIA	ACE inhibitor and a thiazide/thiazide-like diuretic combination	Combination of first-line agents	Treatment of hypertension should not be routinely undertaken in patients with acute stroke unless extreme BP elevation. Combination of an ACE inhibitor with an ARB is not recommended
Nondiabetic chronic kidney disease			
Nondiabetic chronic kidney disease with proteinuria[†]	ACE inhibitors (ARBs if ACE inhibitor-intolerant) if there is proteinuria. Diuretics as additive therapy	Combinations of first-line agents	Carefully monitor renal function and potassium for those receiving an ACE inhibitor or ARB. Combinations of an ACE inhibitor and ARB are not recommended

ACE, angiotensin converting enzyme; ARB, angiotensin receptor blocker; BNP, brain natriuretic peptide; BP, blood pressure; CCB, calcium channel blocker; DBP, diastolic blood pressure; HFrEF, heart failure with reduced ejection fraction < 40%; LVH, left ventricular hypertrophy; NT-proBNP, N-terminal pro B-type naturietic peptide; NYHA, New York Heart Association; SBP, systolic blood pressure; SPC, single-pill combination; TIA, transient ischemic attack.

*Microalbuminuria is defined as persistent albumin to creatinine ratio > 2.0 mg/mmol.

[†]Proteinuria is defined as urinary protein > 150 mg in 24 hours or albumin to creatinine ratio > 30 mg/mmol in 2 of 3 specimens.

Dyslipidemia

Primary versus secondary prevention

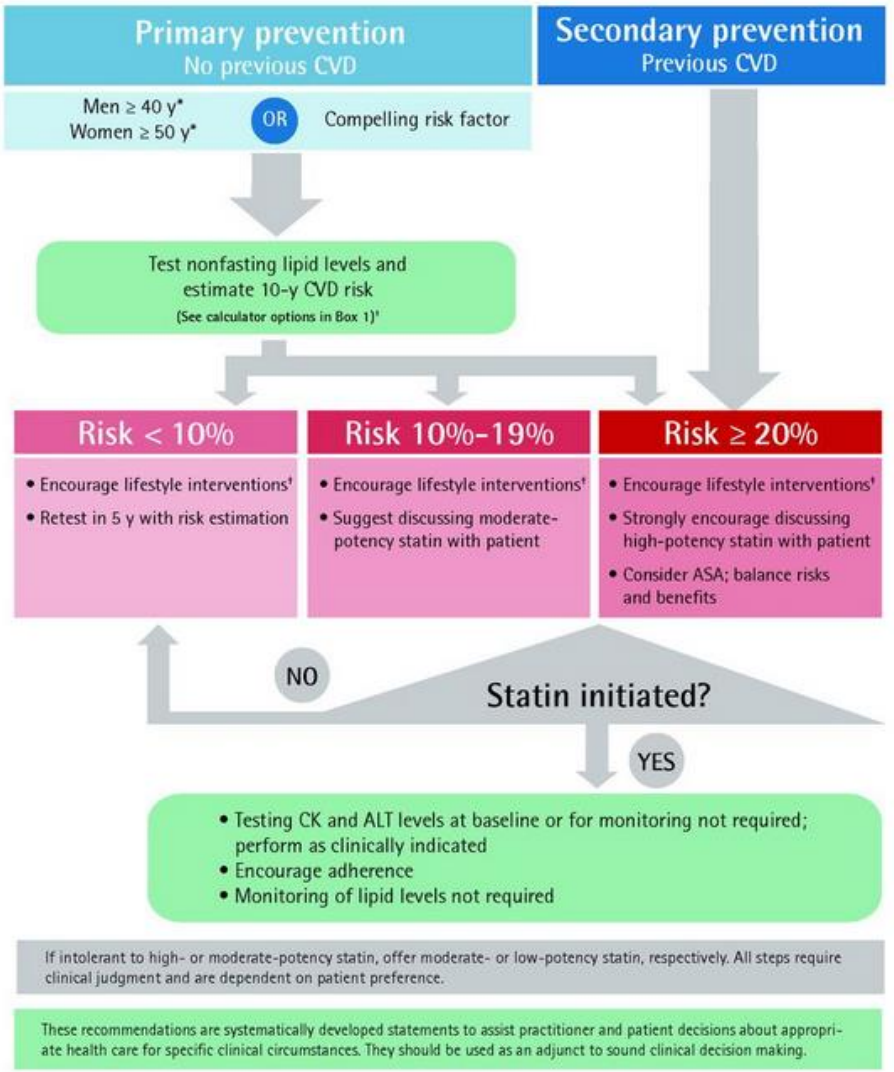
CFP MFC
CANADIAN FAMILY PHYSICIAN • LE MÉDECIN DE FAMILLE CANADIEN
The official journal of the College of Family Physicians of Canada

Simplified lipid guidelines

Prevention and management of cardiovascular disease in primary care

(2015)

Figure 1. Lipid algorithm: *For primary or secondary prevention; excludes those with familial hypercholesterolemia.*



Dyslipidemia

Canadian Cardiovascular Society

2021 Canadian Cardiovascular Society Guidelines for the Management of Dyslipidemia for the Prevention of Cardiovascular Disease in Adults

- New treatment targets
  - Non-HDL and ApoB
- New therapies
  - PCSK9 inhibitors and IPE

Dyslipidemia

Canadian Cardiovascular Society

Statin indicated conditions

Atherosclerotic cardiovascular disease (ASCVD)	Other
Coronary artery disease	Diabetes
Stroke / TIA	CKD
Peripharal arterial disease	LDL ≥ 5 mmol/L
Carotid disease	Familial hypercholesterolemia
AAA	

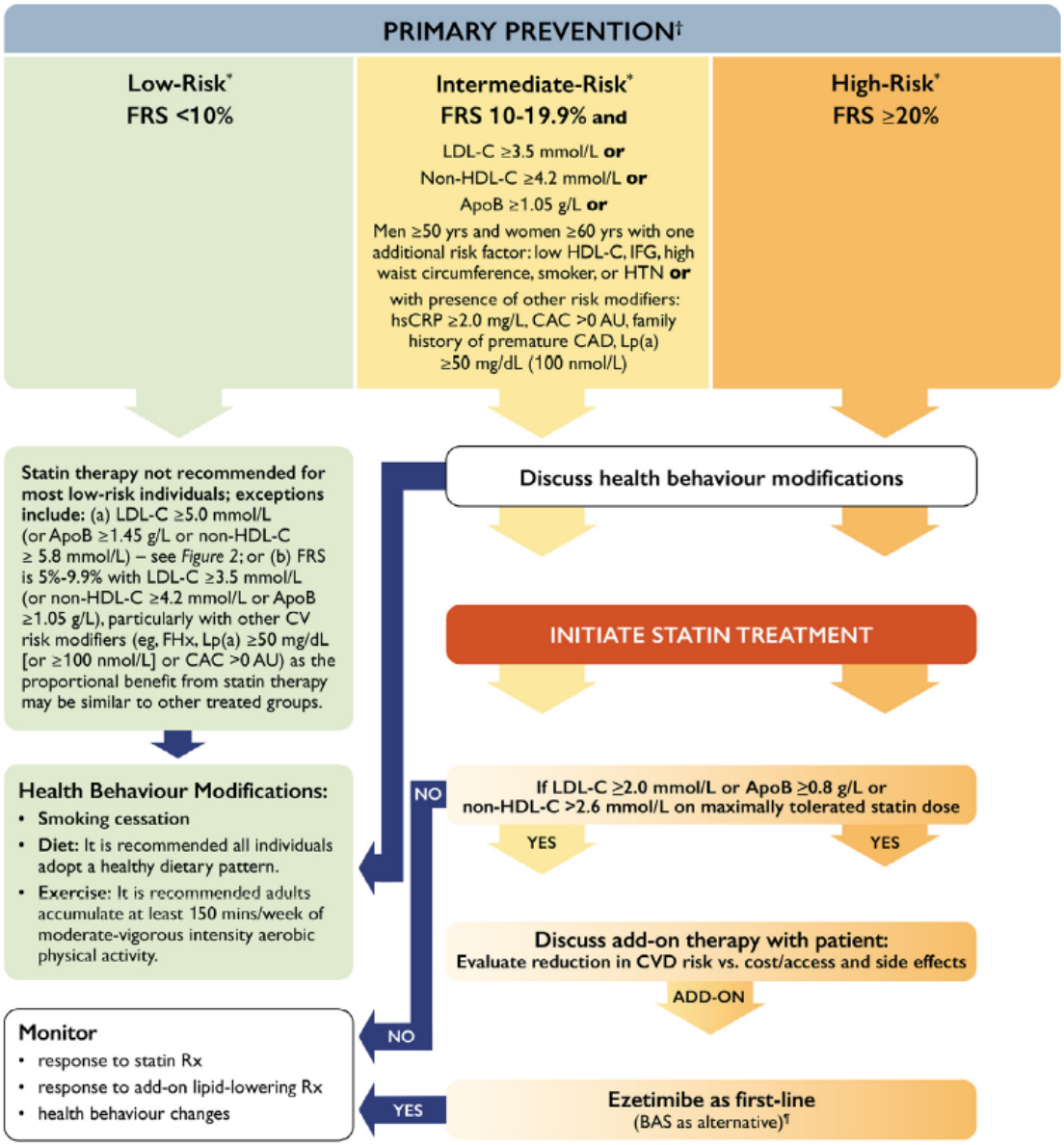
Canadian Cardiovascular Society

Table 1. Who to screen for dyslipidemia in adults at risk

Who to screen
Men 40 years of age or older; women 40 years of age or older (or postmenopausal)
• Consider earlier in ethnic groups at increased risk such as South Asian or indigenous individuals
All patients with any of the following conditions, regardless of age
• Clinical evidence of atherosclerosis
• Abdominal aortic aneurysm
• Diabetes mellitus
• Arterial hypertension
• Current cigarette smoking
• Stigmata of dyslipidemia (corneal arcus, xanthelasma, xanthoma)
• Family history of premature CVD*
• Family history of dyslipidemia
• CKD (eGFR $\leq$ 60 mL/min/1.73 m^2 or ACR $\geq$ 3 mg/mmol)
• Obesity (BMI $\geq$ 30)
• Inflammatory diseases (RA, SLE, PsA, AS, IBD)
• HIV infection
• Erectile dysfunction
• COPD
• History of hypertensive disorder of pregnancy

How to screen:

- Lipid panel
- HbA1c / FPG
- eGFR
- Lipoprotein A**
- ApoB
- Urine ACR



Canadian Cardiovascular Society

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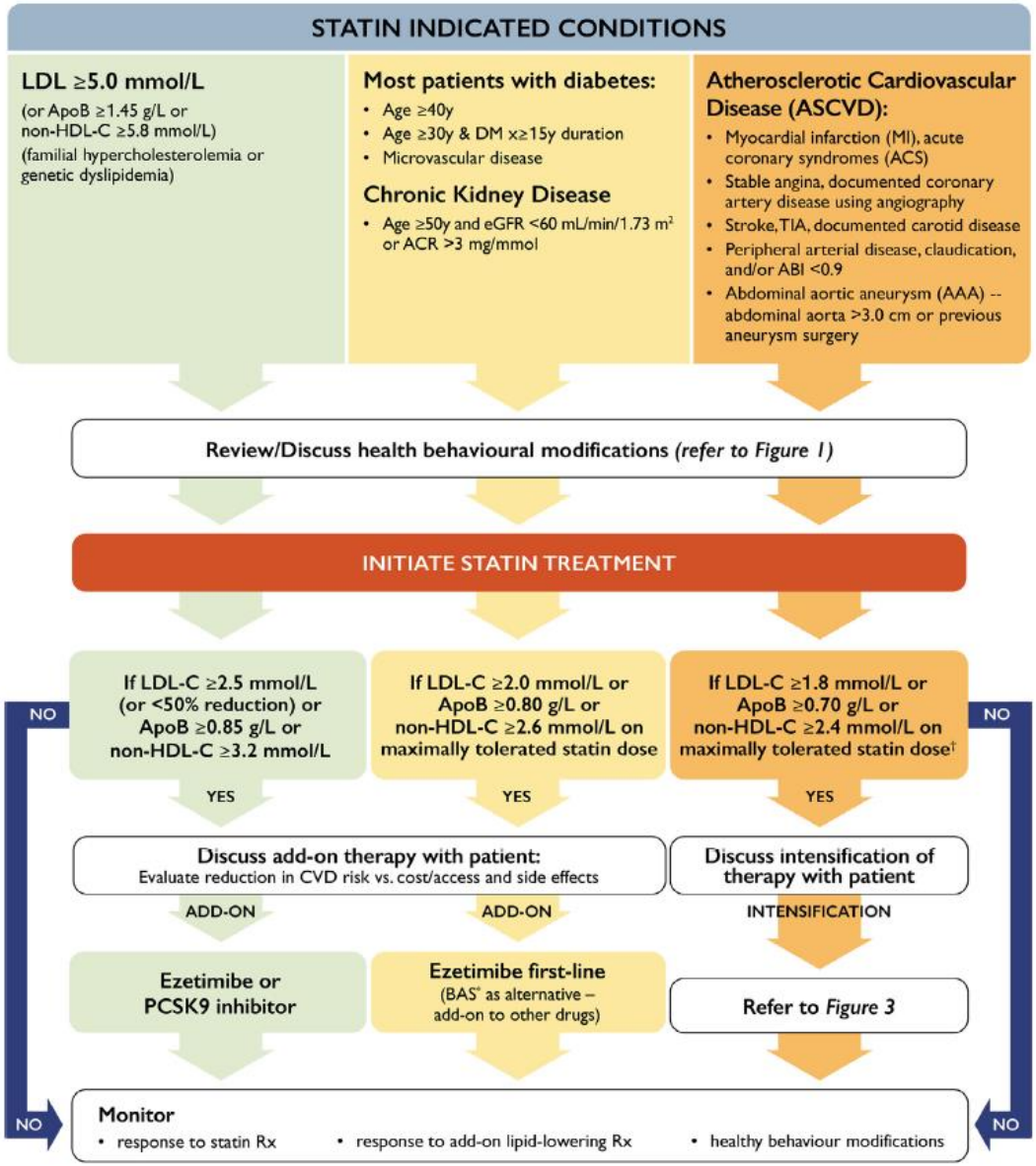

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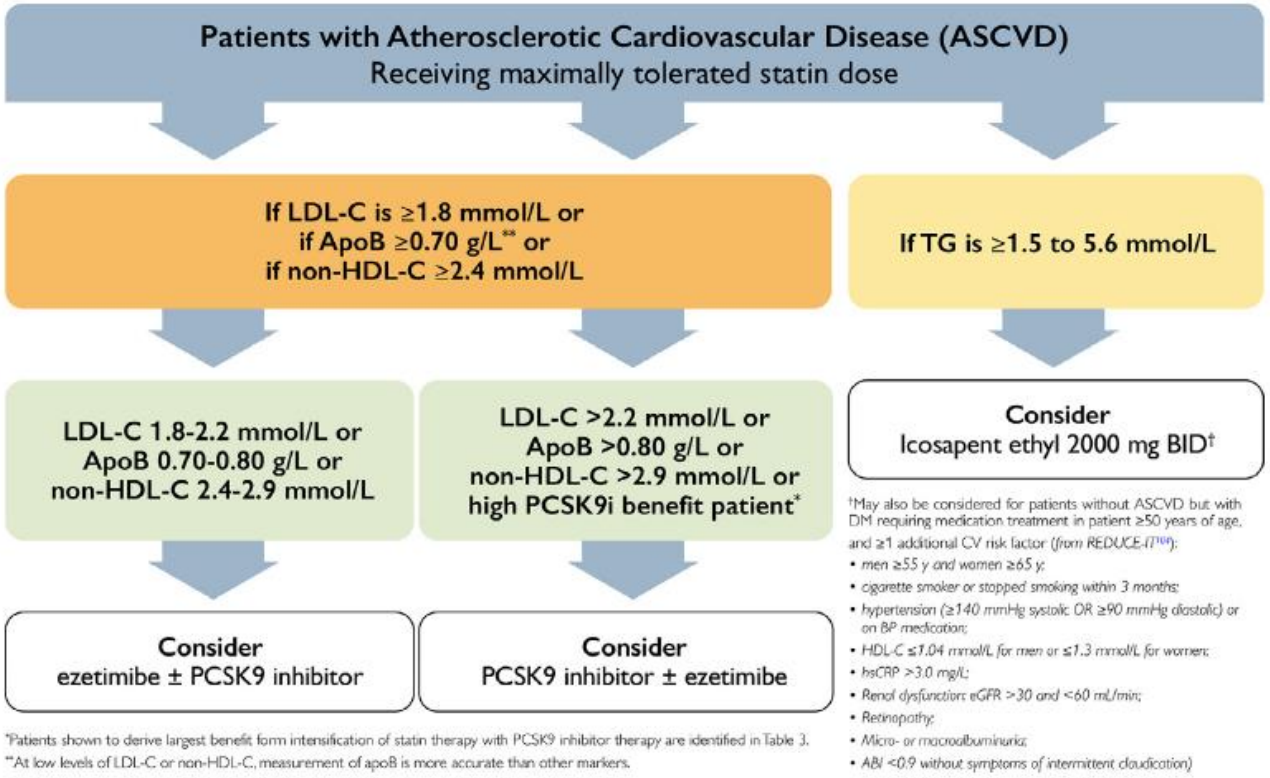

Cardiovascular Risk Reduction with Icosapent Ethyl for Hypertriglyceridemia

Deepak L. Bhatt, M.D., M.P.H., P. Gabriel Steg, M.D., Michael Miller, M.D., Eliot A. Brinton, M.D., Terry A. Jacobson, M.D., Steven B. Ketchum, Ph.D., Ralph T. Doyle, Jr., B.A., Rebecca A. Juliano, Ph.D., Lixia Jiao, Ph.D., Craig Granowitz, M.D., Ph.D., Jean-Claude Tardif, M.D., and Christie M. Ballantyne, M.D. for the REDUCE-IT Investigators*

Article Figures/Media Metrics

38 References 1906 Citing Articles Letters 7 Comments

January 3, 2019
N Engl J Med 2019; 380:11-22
DOI: 10.1056/NEJMoa1812792

PEER simplified lipid guideline 2023 update

Prevention and management of cardiovascular disease in primary care

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Abstract

Objective To update the 2015 clinical practice guideline and provide a simplified approach to lipid management in the prevention of cardiovascular disease (CVD) for primary care.

PEER Simplified Lipid Guideline 2023: Summary

Simplified approach Shared decision making Reduce unnecessary testing

Treatment Algorithm

(Excludes familial hypercholesterolemia)

Primary Prevention (no previous CVD)

Men 40-75 years
Women 50-75 years
or
Compelling risk factor (examples: family history, diabetes, smoking)

Secondary Prevention (previous CVD)

Calculate patient's 10-year cardiovascular risk*

Risk <10%	Risk 10-19%	Risk ≥20%
Encourage healthy lifestyle.† Suggest re-estimate cardiovascular risk in 5-10 years.	Encourage healthy lifestyle.† Suggest discussing statins (preferably moderate intensity).	Encourage healthy lifestyle.† Recommend discussing statins (preferably high intensity).

Statin initiated?

No

- Suggest re-estimating cardiovascular risk in 5-10 years, sooner if risk factors change.

Yes

- No repeat lipid testing.
- No baseline creatine kinase or alanine transaminase unless clinically indicated.

For secondary prevention, if additional cardiovascular risk reduction is desired beyond maximum statin dose:

- Recommend discussing ezetimibe or PCSK9 inhibitors.
  - Due to adverse events, suggest EPA ethyl ester (icosapent) only after ezetimibe or PCSK9 inhibitor considered.

* Risk levels based on Framingham, the only 10-year calculator validated in Canada.

† Lifestyle includes smoking cessation, physical activity and the Mediterranean diet

CVD = cardiovascular disease
EPA = eicosapentaenoic acid
PCSK9 = proprotein convertase subtilisin-kexin type 9

Statin Intensity

Statin (mg)	Low	Moderate	High
Atorvastatin	5	10-20	40-80
Pravastatin	10-20	40-80	-
Rosuvastatin	2.5	5-10	20-40
Simvastatin	5-10	20-40	-

Statin intolerance

An assessment by the Statin Muscle Safety Task Force: 2014 update

Box 1 Factors that may increase the risk of statin induced myopathy

- Advanced age (>80 years old)
- Female sex
- Low body mass index
- Multisystem diseases (for example, diabetes mellitus)
- Diseases affecting kidney or liver function
- Hypothyroidism (untreated)
- Drug interactions, especially with drugs that are inhibitors or substrates of the cytochrome P450 pathway (for example, fibrates, nicotinic acid, calcium channel blockers, ciclosporin, amiodarone, thiazolidinediones, macrolide antibiotics, azole antifungals, protease inhibitors, warfarin)
- Vigorous exercise
- Excess alcohol
- Intercurrent infections
- Major surgery or trauma
- Diet (excessive grapefruit or cranberry juice)
- Genetic factors (for example, polymorphisms of the cytochrome P450 isoenzymes or drug transporters, inherited defects of muscle metabolism, traits that affect oxidative metabolism of fatty acids)

- new-onset or increased symptoms of myalgia (muscle aches, stiffness, cramping, soreness, and tenderness) that were unassociated with recent exercise;
- symptoms that persisted for at least 2 weeks;
- symptoms that resolved within 2 weeks of stopping the study drug; and
- symptoms that reoccurred within 4 weeks of restarting the medication.

An assessment by the Statin Muscle Safety Task Force: 2014 update

Statin intolerance

Table 1 Spectrum of statin-associated muscle adverse events

- Myalgia—unexplained muscle discomfort often described as "flu-like" symptoms with normal CK level. The spectrum of myalgia complaints includes:
  - Muscle aches;
  - Muscle soreness;
  - Muscle stiffness;
  - Muscle tenderness; and
  - Muscle cramps with or shortly after exercise (not nocturnal cramping).
- Myopathy—muscle weakness (not attributed to pain and not necessarily associated with elevated CK).
- Myositis—muscle inflammation
- Myonecrosis—muscle enzyme elevations or hyperCKemia
  - Mild >3-fold greater than baseline untreated CK levels or normative upper limit that are adjusted for age, race, and sex.
  - Moderate ≥10-fold greater than untreated baseline CK levels or normative upper limit that are adjusted for age, race, and sex.
  - Severe ≥50-fold above baseline CK levels or normative upper limit that are adjusted for age, race, and sex.
- Myonecrosis with myoglobinuria or acute renal failure (increase in serum creatinine ≥0.5 mg/dL (clinical rhabdomyolysis).

CK, creatine kinase.

Rheumatology International (2023) 43:383–390
https://doi.org/10.1007/s00296-022-05230-0

Rheumatology
INTERNATIONAL

CASE BASED REVIEW

Check for updates

Challenges in the diagnosis and management of immune-mediated necrotising myopathy (IMNM) in a patient on long-term statins

Dyslipidemia in the elderly

Considerations in patients older than 75 y

15. For primary prevention in patients older than 75 y, we **recommend against** lipid testing and the assessment of risk using a CVD risk calculator
16. We **suggest against** the routine initiation of statin therapy for primary prevention in patients older than 75 y. However, it may be reasonable to discuss the benefits and risks of statin therapy for primary prevention in some patients older than 75 y whose overall health status is good
17. In patients older than 75 y who have had a cardiovascular event, we **recommend** clinicians discuss the benefits and risks with patients and encourage the initiation of statin therapy
18. In patients already taking and tolerating a statin, we **recommend against** stopping the statin or reducing the dose just because patients have aged beyond 75 y
19. We **recommend against** altering statin prescribing for cognitive concerns

Dyslipidemia in the elderly

Table 2.

Ongoing Studies of Statin Therapy in the Elderly

	SCOPE-RCT	SITE	STAREE
Country	South Korea	France	Australia
Age	>75 years	>75 years	>70 years
Type of prevention	Primary	Primary	Primary
Study Arms	Moderate dose vs high dose statin	D/C statin vs not D/C statin	Atorvastatin 40 mg/day vs placebo
Primary endpoint	Statin-Associated Muscle Symptoms	Incremental cost per QALY gained, mortality	Death, dementia or disability
Secondary endpoints	Fatal and nonfatal CV events	New events: cardiovascular, cognitive, diabetes	Fatal and nonfatal CV events, diabetes, dementia, hospitalization, QALY, cost-effectiveness
Duration	6 years	3 years	7 years
Number of enrollees	2,234	2,430	18,000
Year of completion	2024	2021	2023

Carotid artery disease

The clock is ticking!

Carotid Artery disease

Symptomatic

Imaging modality

- Carotid doppler (CD), CT-A or MR-A
- If intervention considered based on CD, need further imaging

Intervention

- CEA > CAS
- CAS may be considered in patients who are poor surgical candidates

Carotid Artery disease

Symptomatic

Indication for revascularization

- Symptomatic event with ipsilateral carotid artery stenosis
- Recommended: Men with 50-99% and women with 70-99%
- May be considered: Women 50-69%

Timing

- As early as possible** and ideally 14 days from event
- Men 50-69%: greatest benefit within 14 days from event, attenuated beyond that time window

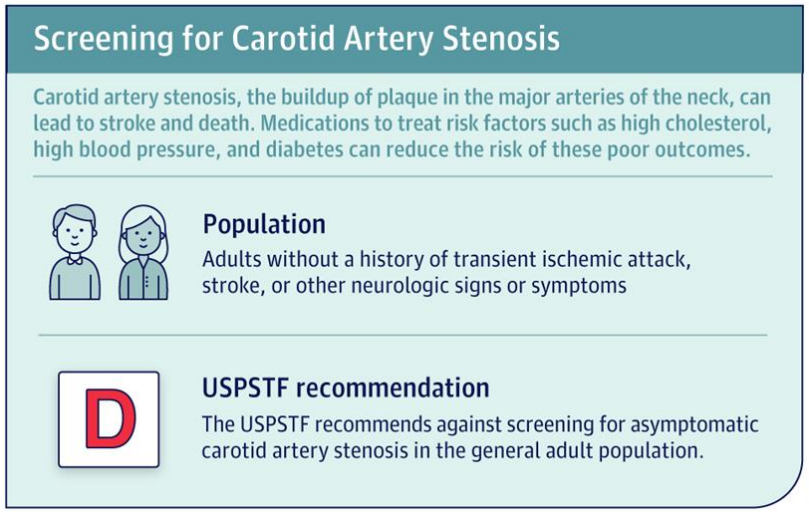
Carotid Artery disease

Canadian Stroke Best Practices

Asymptomatic or remotely symptomatic

- Aggressive medical management
- Highly selected patients may be considered for intervention, for 60-99% stenosis
  - Acceptable surgical risk, >5yr life expectancy
  - Women 60-99% - unclear benefit
  - Less than 3% risk of peri-op morbidity and mortality (surgeon)
  - Significant improvement in risk factor modification since trials for asymptomatic stenosis interventions
- CEA > CAS, though CAS if not operative candidate

Asymptomatic Carotid stenosis



Choosing Wisely®

Screening for Carotid Artery Stenosis in Asymptomatic Adult Patients

Recommendation

Don't screen for carotid artery stenosis (CAS) in asymptomatic adult patients.

- There is good evidence that for adult patients with no symptoms of carotid artery stenosis, the harms of screening outweigh the benefits.
- Screening could lead to non-indicated surgeries that result in serious harms, including death, stroke and myocardial infarction.

Atrial fibrillation with CVA/TIA

- Oral anticoagulation is strongly recommended over antiplatelet
- DOAC preferred over warfarin
- If already on warfarin, with INR time in range >70%, reasonable to continue. *patient preference

- Stroke/TIA while on anticoagulation
  - Adherence
  - Confirm dosing / INR in control
  - Medication interactions?
  - Other potential stroke etiologies?
  - Risk factor modification

References

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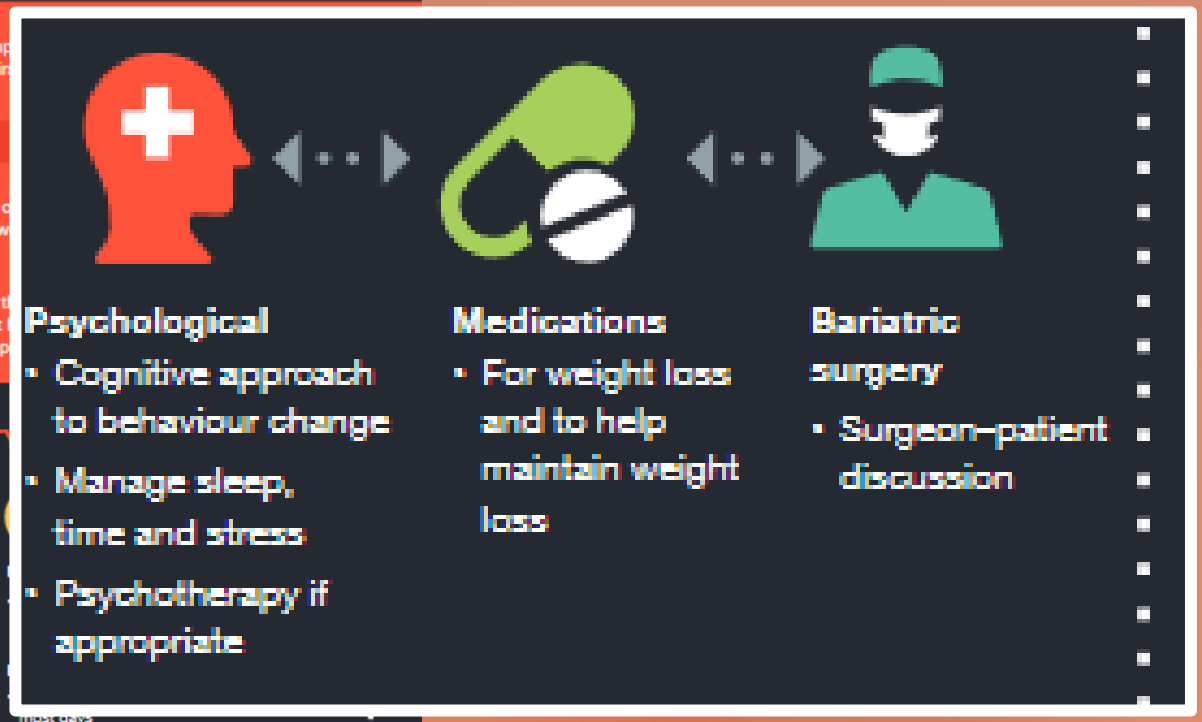


Obesity in adults: a clinical practice guideline

obesity canada | obésité canada

Key messages for health practitioners

- Pharmacological treatments are an effective and scalable approach to treating obesity. As with any chronic disease, such as type 2 diabetes (T2DM) or hypertension, pharmacotherapy is an important pillar in the management of obesity.
- The focus of obesity management should be the improvement of health parameters (metabolic, mechanical, mental, and/or quality of life [QoL]), not solely weight reduction, and should include outcomes that the patient identifies as important. Obesity is defined by body mass index (BMI) in clinical trials, which itself does not adequately reflect the burden of adiposity-related disease.
- There are four medications indicated for long-term obesity management in Canada as adjuncts to health-behaviour changes: liraglutide (Saxenda®), naltrexone/bupropion (Contrave®) in a combination tablet, orlistat (Xenical®) and semaglutide (Wegovy®). All four medications are effective in producing clinically significant weight loss and health benefits greater than placebo over a duration of at least one year.
- The individual response to pharmacotherapy for obesity management is heterogeneous. Efficacy (both for weight and management of obesity-related health issues), mechanism of action, safety, potential side effects/tolerability, contraindications, medication interactions, mode of administration and cost are important considerations in choosing the most appropriate obesity pharmacotherapy.
- Obesity medications are intended as part of a long-term treatment strategy. Clinical trials of pharmacotherapy for obesity management consistently demonstrate regain of weight when treatment is stopped.
- Medications that are not approved as pharmacotherapy for obesity management should not be used for this purpose.

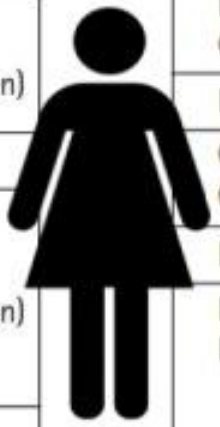
Stroke in Women

Stroke risk factors in women

Common risk factors

Less favorable for women

Comparison of women to men	
Prevalence	
Hypertension in older age[19] Migraine[58] Obesity[64,65]	Greater (women > men)
Association with stroke risk	
Hypertension[29-31] Diabetes mellitus[29,37] Atrial fibrillation (AF)[39,40] Migraine[63] Smoking[29,69]	Greater (women > men)
Treatment rate	
Oral anticoagulant therapy[42,43] Statin therapy[56,57]	Lesser (women < men)
Procedural complication rate	
Catheter ablation of AF[45] Left atrial appendage closure[46,47]	Greater (women > men)

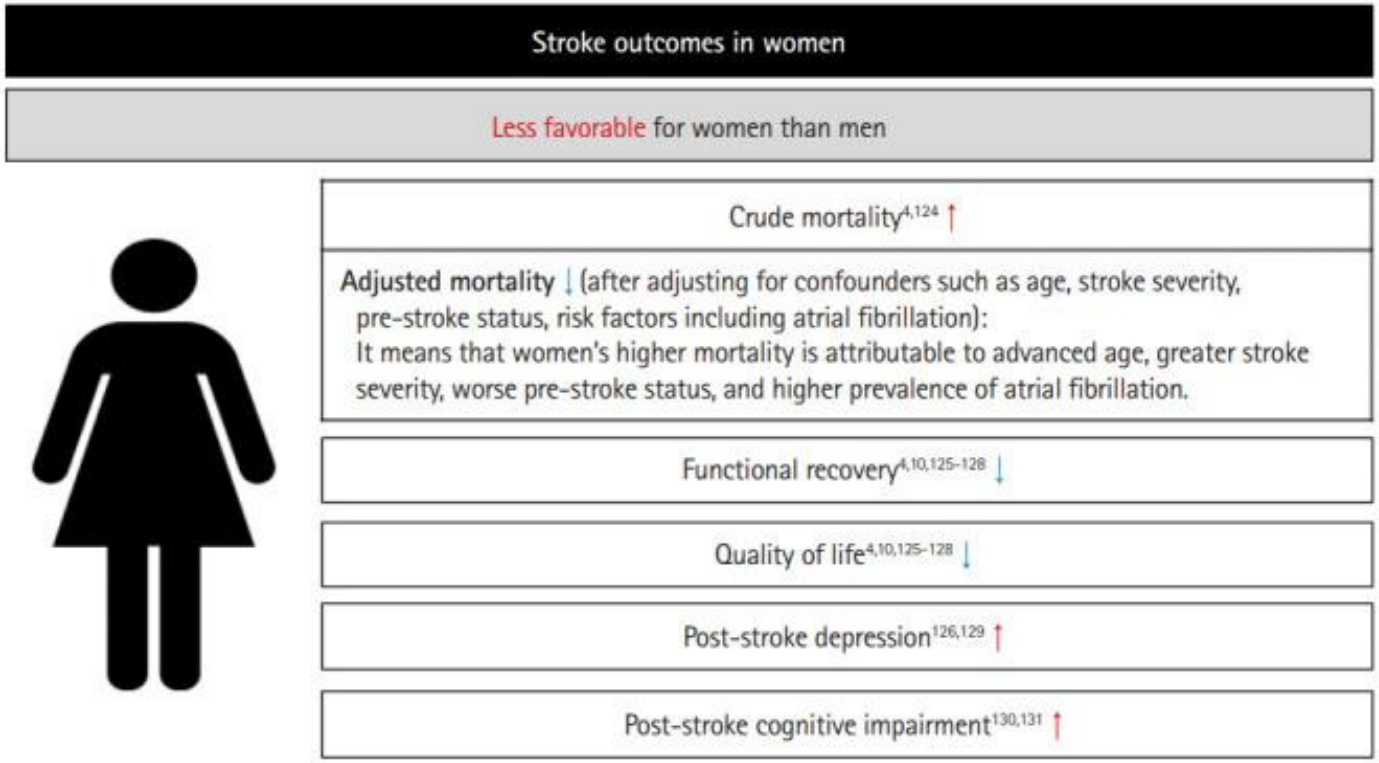


Women-specific risk factors

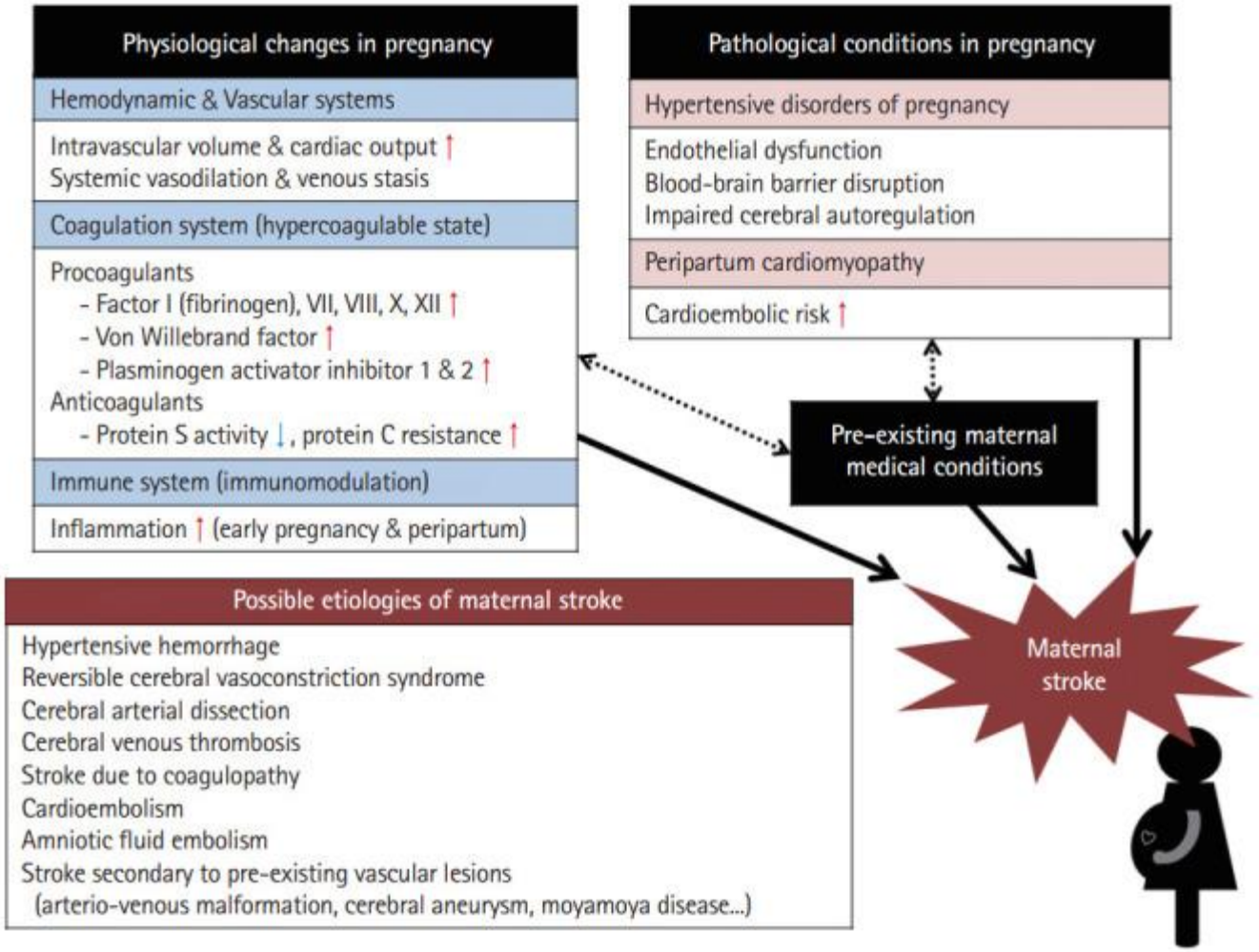
Unique to women

Pregnancy & adverse pregnancy outcomes
Hypertensive disorders of pregnancy Preterm delivery Gestational diabetes
Exogenous estrogen
Oral contraceptive Oral postmenopausal hormone therapy
Lifetime endogenous estrogen exposure
Early & late menarche Early menopause - Natural menopause - Surgical menopause (oophorectomy with/without hysterectomy)

Stroke in Women: A Review Focused on Epidemiology, Risk Factors, and Outcomes



Stroke in Women: A Review Focused on Epidemiology, Risk Factors, and Outcomes



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