The Physician Learning Program and the Office of Lifelong Learning

Cardiovascular Issues in Primary Care

Pressing Matters: How to approach hypertension

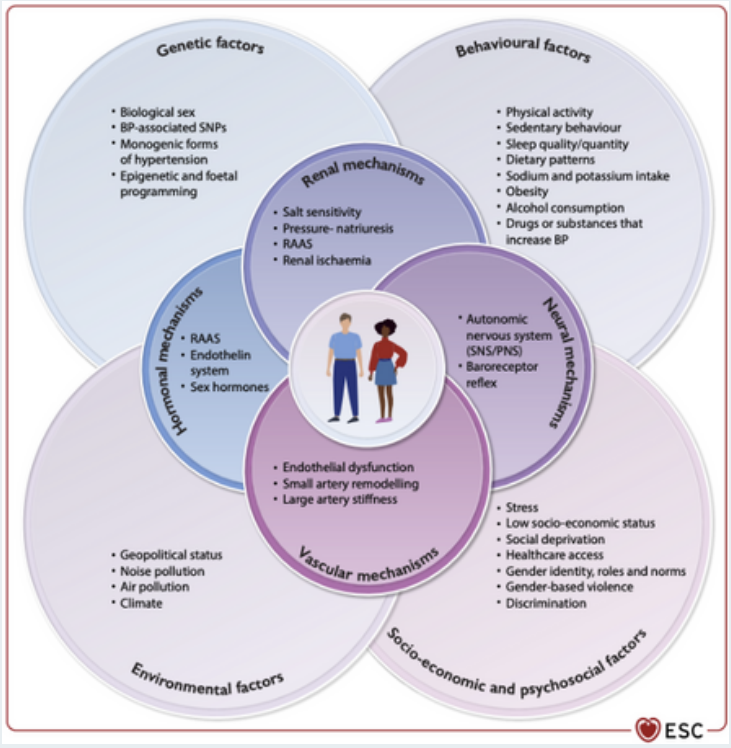
Dr. Raj Padwal

Key Messages

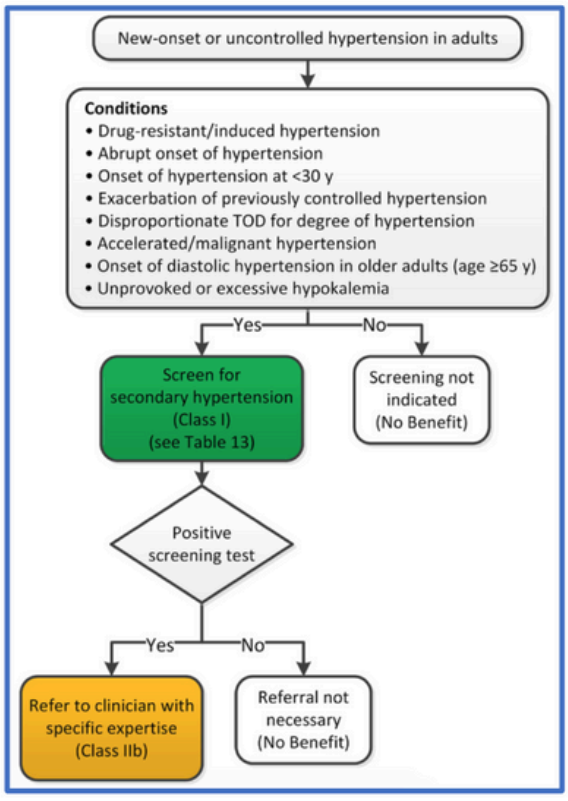
Etiology for hypertension is multifactorial

Most common etiologies:

1. Primary (polygenetic) Hypertension (HTN)
2. Obesity (central adiposity) with or without sleep apnea associated hypertension
3. Vascular stiffness (isolated systolic HTN) in elderly patients.
4. Primary aldosteronism - a commonly missed secondary cause



Screening for Secondary Causes



Source: 2017 US Guidelines

Screening Hierarchy

Category 1: Easy
Obesity
Sleep Apnea
Medications
Renal parenchymal

Category 2: ?Screen everyone
Primary Aldosteronism

Category 3: Only if Syx/Signs/FH/Imaging Abn
Coarct (femoral-radial delay)
Thyroid Disease
Cushing's
Pheo

Category 4: Selected (Invasive)
Renal Artery Stenosis from FMD or ASCVD

The Physician Learning Program and the Office of Lifelong Learning

Cardiovascular Issues in Primary Care

Pressing Matters: How to approach hypertension

Dr. Raj Padwal

Secondary Causes: Clinical Assessment

Causes	Screening Test
Primary Hyperaldosteronism	Cramps, weakness, low potassium (minority)
Renovascular (fibromuscular dysplasia or atherosclerotic subtypes	History of aneurysms, **migraines, pulsatile tinnitus,** arterial dissections and/or known aneurysms, known atherosclerosis or multiple risk factors, bruit
Cushing's	Cushingoid appearance **(ask for old pics),** bruising, **striae**, osteroporosis, glucose intolerance, thin skin, neuropsych, hypokalemic, metabolic alkalosis, **proximal weakness**
Pheo-chromocytoma	Headache, palpitations, diaphoresis, orthostasis, labile BP
Renal Parenchymal	Elevated creatinine, Albumin-to-Creatinine Ratio (ACR), active sediment in GN, cortical atrophy

Screening for Major Secondary Causes

Causes	Screening Test
Primary Hyperaldosteronism	Aldosteronism/renin ration (7-10am; ambulatory)
Renovascular	CT angiogram renal arteries, Magnetic Resonance Angiography or renal dopplers in centres with experience
Cushing's	24-hour urine cortisol, low dose dexamethasone suppression test and/or late night salivary cortisol (two or three)
Pheo-chromocytoma	Plasma metanephrines (supine for 20 minutes) or 24-hour urine metanephrines
Renal Parenchymal	Creatinine, urinalysis, ultrasound

Primary Aldosteronism Screening

Screening for hyperaldosteronism should include plasma aldosterone and renin activity (or renin concentration)

- measured in morning samples
- taken from patients in a sitting position after resting at least 15 minutes
- The hallmark finding is that renin should be suppressed or nearly suppressed
- In Edmonton, aldosterone-to-renin ratio of ≥100 pmol/L/ng/L is potentially positive. The assay may change to the one used in Calgary in 2026.
- Aldosterone antagonists, ACE inhibitors/ARBs, thiazides, and dihydropyridine CCBs can cause false negatives. Beta-blockers and clonidine can cause false positives. Alpha-blockers, hydralazine and verapamil don't interfere.
- A positive screening test should lead to referral or further testing.

Stop/switching meds not always feasible.

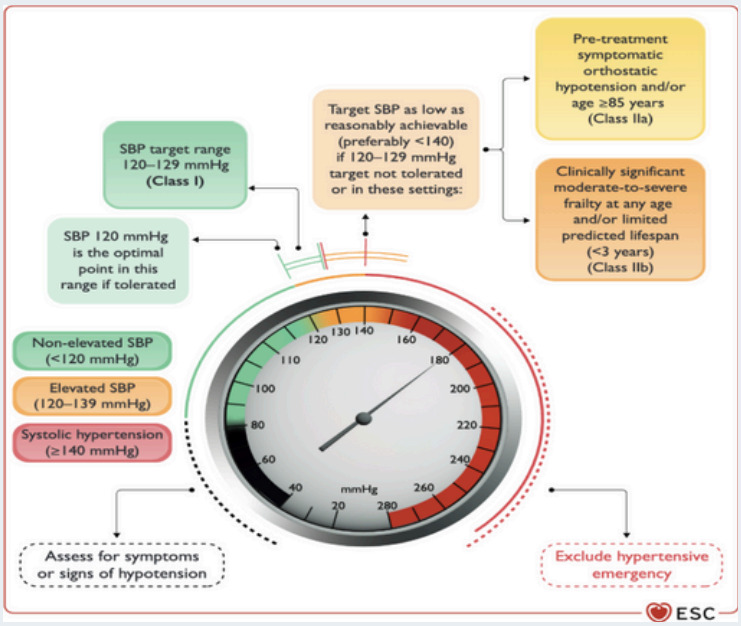
The Physician Learning Program and the Office of Lifelong Learning

Cardiovascular Issues in Primary Care

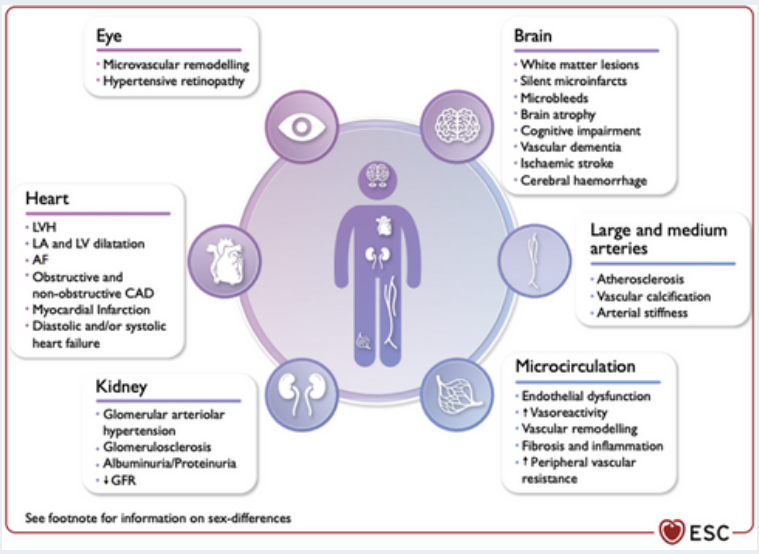
Pressing Matters: How to approach hypertension

Dr. Raj Padwal

Treatment Targets



Sequelae of Uncontrolled Hypertension

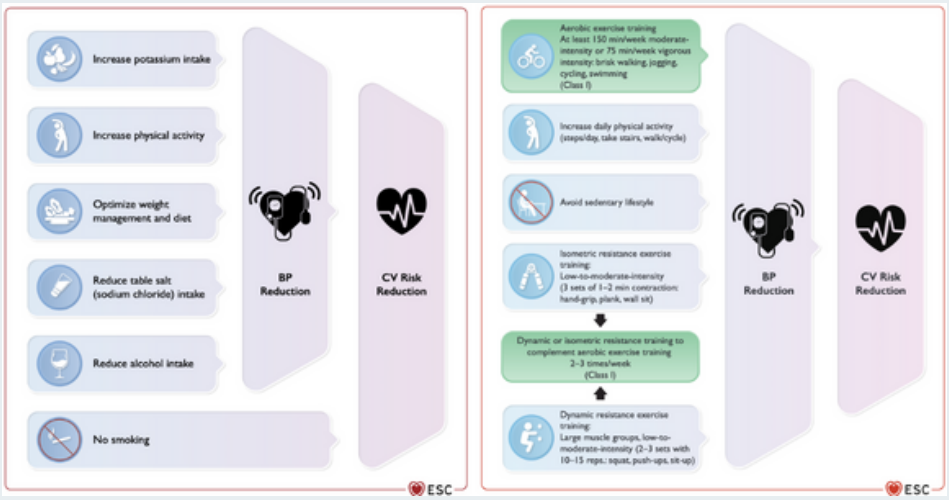


Accurate BP Measurement

Key Messages

- Accurate BP measurement is essential. Periodically reinforce proper home BP measurement technique.
- Secondary hypertension work-up is key in cases in which usual etiologies (primary, central adiposity, advanced age with vascular stiffness, meds) are absent. Also consider when severe or resistant or early onset hypertension is present.

Health Behaviour Optimization



Physician Learning Program | UNIVERSITY OF ALBERTA

Find a previous webinar or learn about our upcoming events

Click here!

The Physician Learning Program and the Office of Lifelong Learning

Cardiovascular Issues in Primary Care

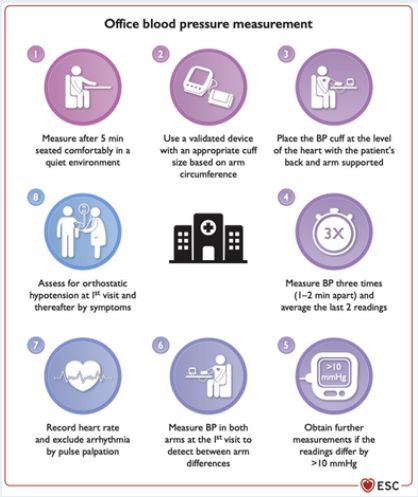
Pressing Matters: How to approach hypertension

Dr. Raj Padwal

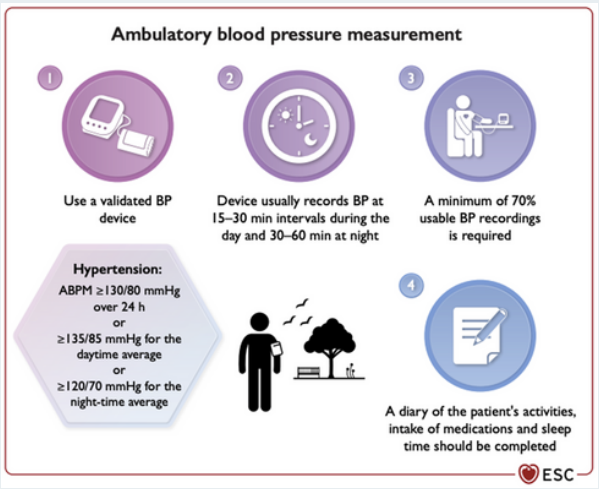
Diagnosis of High Blood Pressure

Out-of-office BP measurements (ABPM, home BP series) are preferred for diagnosis and follow-up.

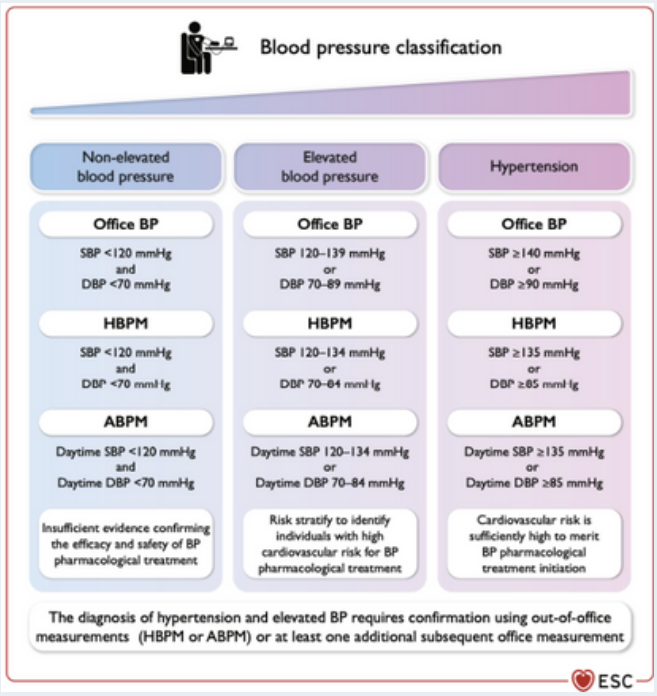
More Accessible



The Gold Standard



Diagnostic Thresholds



Most contemporary HTN guidelines recommend a target BP <130 mmHg systolic in moderate to high-risk individuals, but individualize according to frailty level.

The Clinical Frailty Score is useful for assessing frailty.

Other Resources:

- **Hypertension Dyslipidemia Clinic Kaye Edmonton Clinic:** Accepts referrals for Resistant HTN, HTN in patient at high-risk, Secondary HTN, 24-hour ABPM; Familial Hypercholesterolemia (LDL ≧ 5.0 mmol/L), Statin intolerance, Secondary prevention, High Lp(a), High triglycerides. **Phone 780-492-7711; Fax 780-492-7277; Connect Care direct**
- **The European Society of Cardiology 2024 Guidelines**
- **The Canadian Hypertension Society 2025 Guidelines**

Join NAPCReN (Northern Alberta Primary Care Research Network) to learn more about how you can contribute to primary care research in a meaningful way.

Consider using **MyL3Plan**, a free online tool developed by the Office of Lifelong Learning (L3) that can be used to meet and support the 3 activities/action plans required by the PPIP-CPSA and earn up to 36 Mainpro+ certified credits.

Learn more here!

Physician Learning Program | UNIVERSITY OF ALBERTA

Find a previous webinar or learn about our upcoming events

Click here!