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The 2013 CHEP Recommendations

What's new in the treatment of hypertension?

What's still really important?

Disclosure of Potential for Conflict of Interest Primary Care Stroke Update:

What's New in Best Practice Prevention & Care

Presenter
Dr. Sheldon Tobe

DISCLOSURE:

- **Have received honoraria for past academic talks from pharmaceutical manufacturers including Pfizer, Bristol-Myers, Amgen, Roche, Merck, Valeant and Boehringer-Ingelheim**
- **Research investigator with Abbott, AstraZeneca, Pfizer, Janssen, Novartis, Bristol-Myers, Amgen, Roche, Merck and Boehringer-Ingelheim**
- **Member of the Advisory Board for Pfizer, Merck, Abbott, Bristol-Myers, Otsuka and Takeda**

Evidence-based Annual Recommendations

The Canadian Hypertension Education Program is central to Hypertension Canada

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CHEP is known as the most credible source for evidence-based chronic disease management recommendations with annual updates, a well-validated review process and effective dissemination techniques across Canada

Canada has the world's highest reported national blood pressure control rates

The Canadian Hypertension Education Program: 2013 Recommendations

What's still important?

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CHEP 2013 Recommendations

What's new?

- Revised BP thresholds for initiating therapy
- More guidance in structuring exercise prescription as a component of lifestyle modification

How do you decide on the optimal threshold for initiating hypertension TREATMENT??

- Based on the “inflection point” for rise in risk associated with blood pressure?
- Based on the average achieved blood pressure in randomized trials demonstrating the effectiveness of therapy?
- Based on the thresholds/targets used for initiating treatment?
- Based on those studies which compared the effectiveness of treatment based on two (or more) BP thresholds and/or targets?

BP thresholds for drug treatment*

* lifestyle modification is recommended for all regardless of BP

General population (including CKD) (CHEP 2011**)	140/90
Very elderly (≥80) (CHEP 2013)**	**150**
Diabetes (CHEP 2000**)	130/80
Very low CV risk (CHEP 2000**)	**160/100**

** Year of incorporation into CHEP recommendations

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CHEP Recommendation: the very elderly

III. Choice of Therapy for Adults With Hypertension without Compelling Indications for Specific Agents	New Recommendation for 2013
B) Recommendations for Individuals with Isolated Systolic Hypertension	**ADD:** **In the very elderly (age 80 years and older), the target for systolic BP should be < 150 mmHg (Grade C).**

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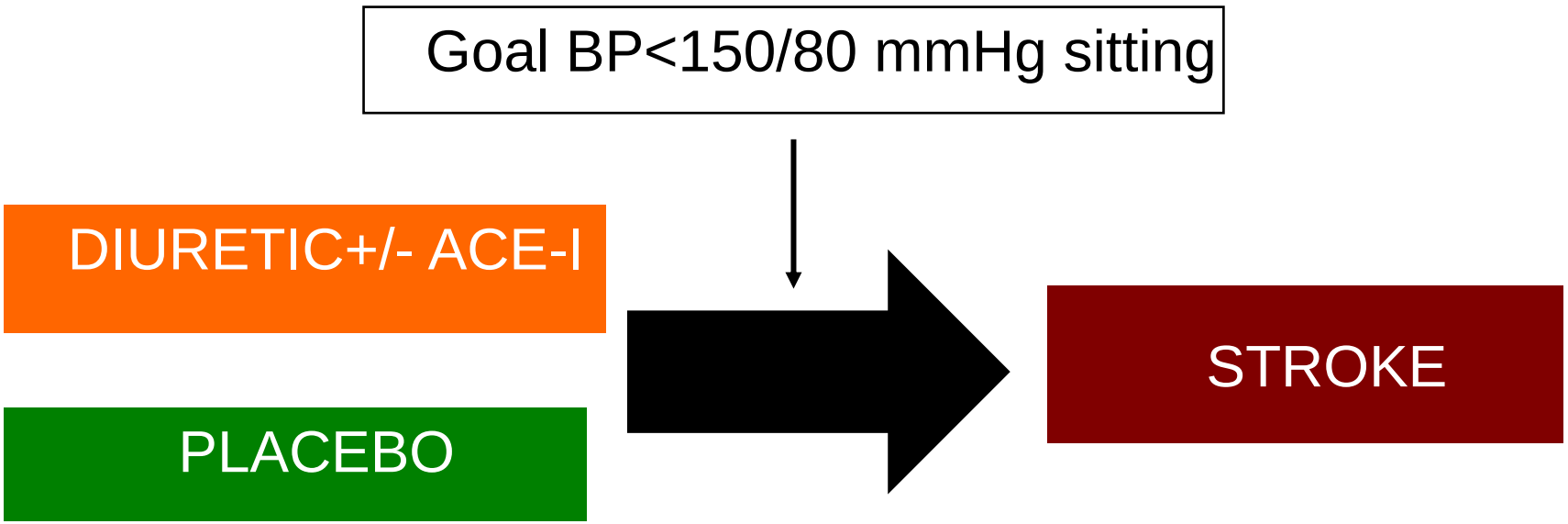
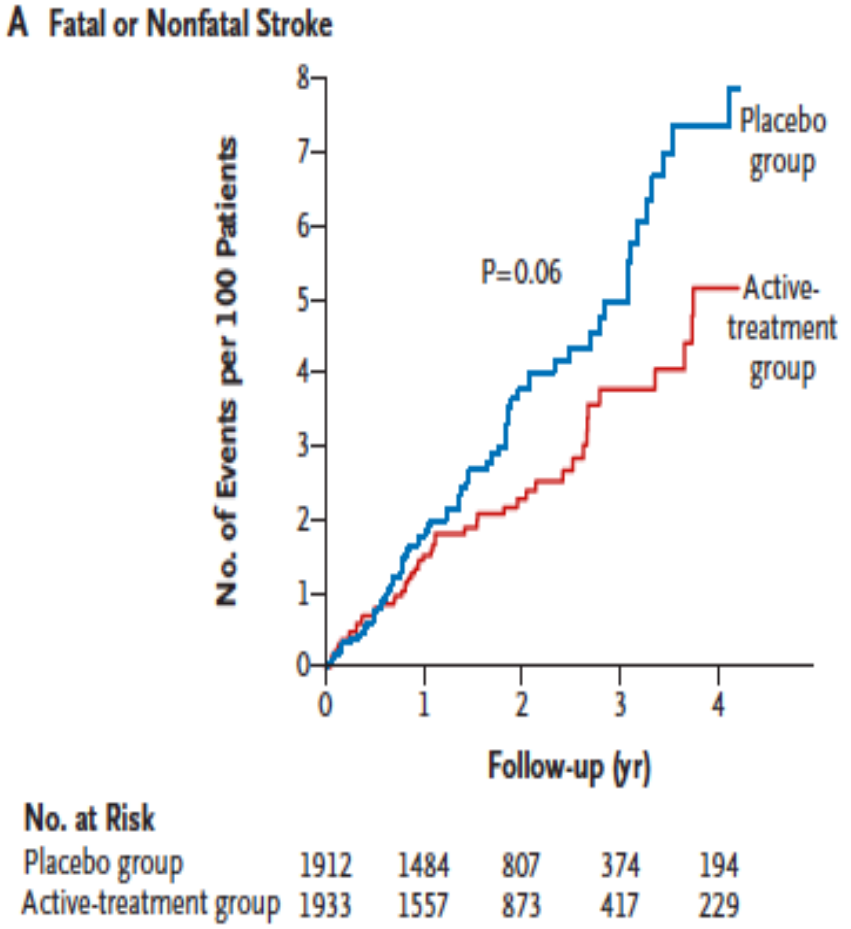
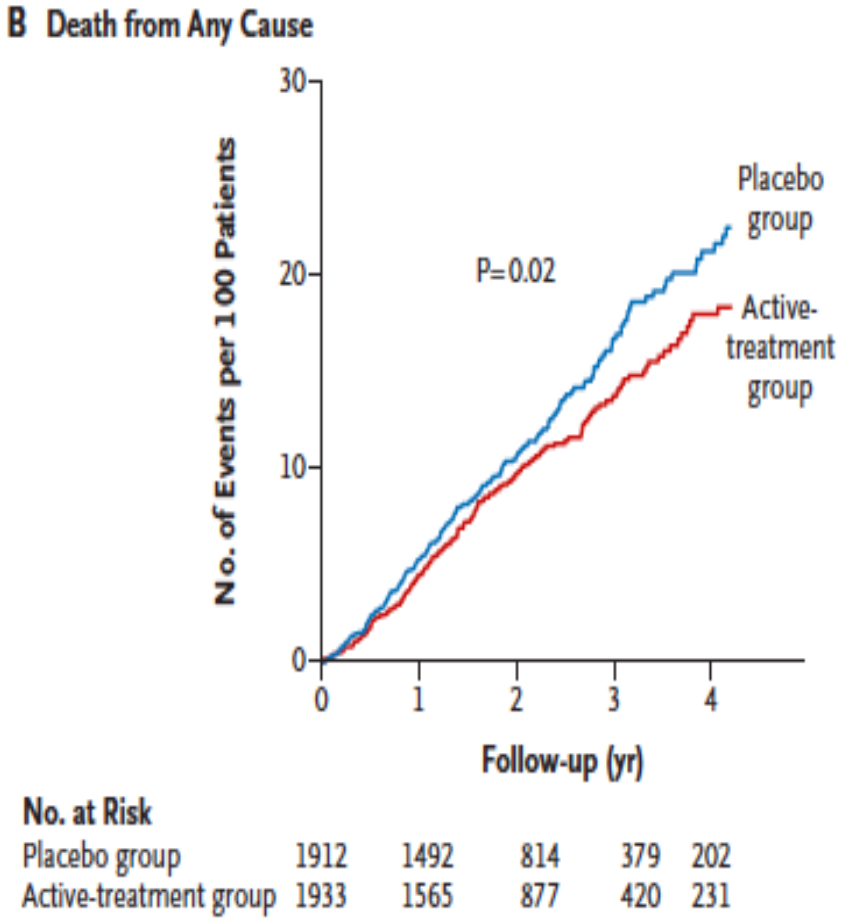
HYVET protocol



HYVET (treatment target of <150 mmHg): the basis for the new 80+ recommendation





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N Engl J Med. 2008 May 1;358(18):1887-98.

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Diabetes and Hypertension

- Persons with diabetes mellitus should be treated to attain systolic blood pressure of < 130 mmHg (Grade C) and diastolic blood pressures < 80 mmHg (Grade A).

- These target blood pressure levels are the same as the blood pressure treatment thresholds.

The targets for patients with diabetes and hypertension have remained unchanged post- ACCORD-BP.

Meta-analyses examining SBP targets <140mmHg in patients with diabetes

Bangalore et al. Circ 2011	Reboldi et al. J Hyperten 2011
Included only trials that achieved SBPs < 140 mmHg	Included all anti-hypertensive trials
Outcomes were mortality, CV mortality, MI, HF and stroke	Outcomes were MI and stroke only

Summary of evidence in patients with diabetes and hypertension

- SBP lowering below 140 mmHg appears beneficial with respect to all cause mortality and stroke
- SBP lowering below 135mmHg or 130 mmHg appears to confer significant benefit with respect to stroke
- As SBP decreases below 140 mmHg, the risk of SAEs increases but the absolute number of these events is low

CHEP 2012 revisited the CKD BP targets following publication of new data

CHEP 2011	***CHEP 2012***
For patients with nondiabetic chronic kidney disease, target BP is <130/80 mm Hg (Grade C).	**For patients with nondiabetic chronic kidney disease, target blood pressure is <140/90 mm Hg (Grade B).**

The face of very low risk hypertension

- 42 year old female. Family history of hypertension (father and mother). Cycles daily. Non-smoker. Entirely asymptomatic
- BP = 148/98 mmHg (average of repeated measures)
- BMI=22 kg/m^2, WC=78 cm
- TC 3.8 mM, LDL 2.2. mM, Fasting Blood Glucose 4.6 mM

Given her elevated BP and assuming failure of other lifestyle modifications would you treat her with antihypertensive drugs?

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Benefit of BP lowering in the "average" hypertensive (i.e., middle aged male)

Number-needed-to-treat (NNT10 yr) to prevent a CV event/death or a death from all causes by BP lowering

	Stage 1	Stage 2
No other risk factors (beyond age and male gender)	**60**	**23**
≥1 other risk factor	**16**	**9**
+ CVD or TOD	**12**	**9**

TOD=target organ damage

Ogden et al. *Hypertension* 2000;35:539-43

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What is her 10 yr. CV risk?

A) low (less than 10 %)

B) moderate (10-20%)

C) high (greater than 2

So low that it's off the scale

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Reducing 10 yr. CV risk from 1% with antihypertensive Rx: What's in it?

- Overall relative risk reduction with effective BP lowering ~25%

- Thus, assuming 10 yr. risk is 1%, effective Rx would lower her risk 0.25% and you will need to treat 400 patients like her for 10 years to avoid 1 MI !!

Hypertension **without** compelling indications for specific Rx: the stage 1 low risk hypertensive

Indication for drug therapy

Antihypertensive therapy should be prescribed for average diastolic blood pressures of **100 mmHg** or higher (Grade A), or average systolic blood pressures of **160 mmHg** or higher (Grade A) in patients without macrovascular target organ damage or other cardiovascular risk factors.

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Impact of lifestyle therapies on blood pressure

Intervention	**Systolic BP** (mmHg)	**Diastolic BP** (mmHg)
Diet and weight control	-6.0	-4.8
Reduced salt/sodium intake	-3.4	-2.2
Reduced alcohol intake (heavy drinkers)	-3.4	-3.4
DASH diet	-11.4	-5.5
Physical activity	-3.1	-1.8
Relaxation therapies	-3.7	-3.5
Multiple interventions	-5.5	-4.5

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Clinical Guideline : Methods, evidence and recommendations National Institute for Health and Clinical Excellence (NICE) May 2011

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Lifestyle Therapies in Adults with Hypertension: Summary

Intervention	Target
Reduce foods with added sodium	< 2300 mg /day
Weight loss	BMI <25 kg/m^2
Alcohol restriction	≤ 2 drinks/day
Physical activity	30-60 minutes 4-7 days/week
Dietary patterns	DASH diet
Smoking cessation	Smoke free environment
Waist circumference	Men <102 cm Women <88 cm

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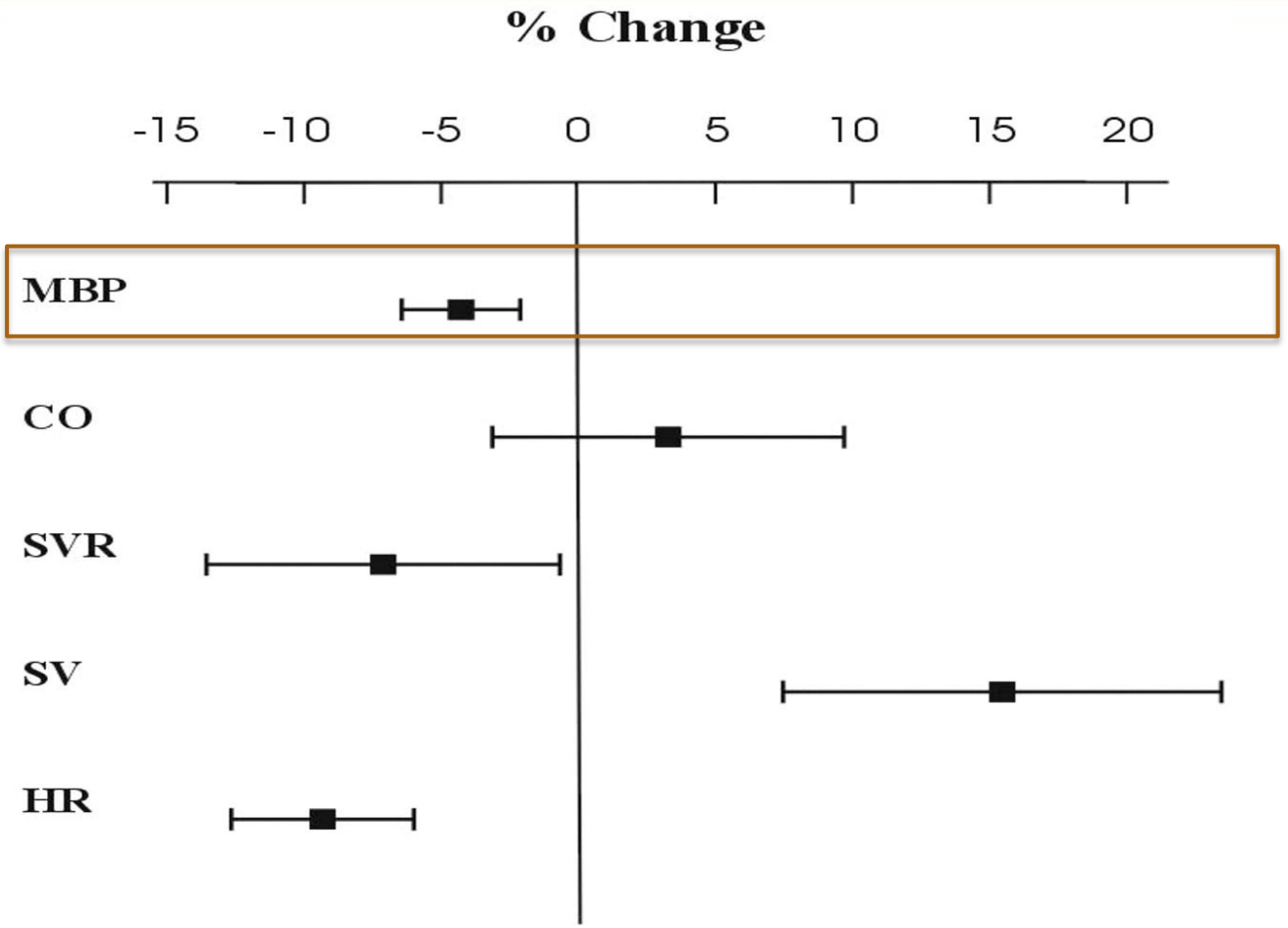
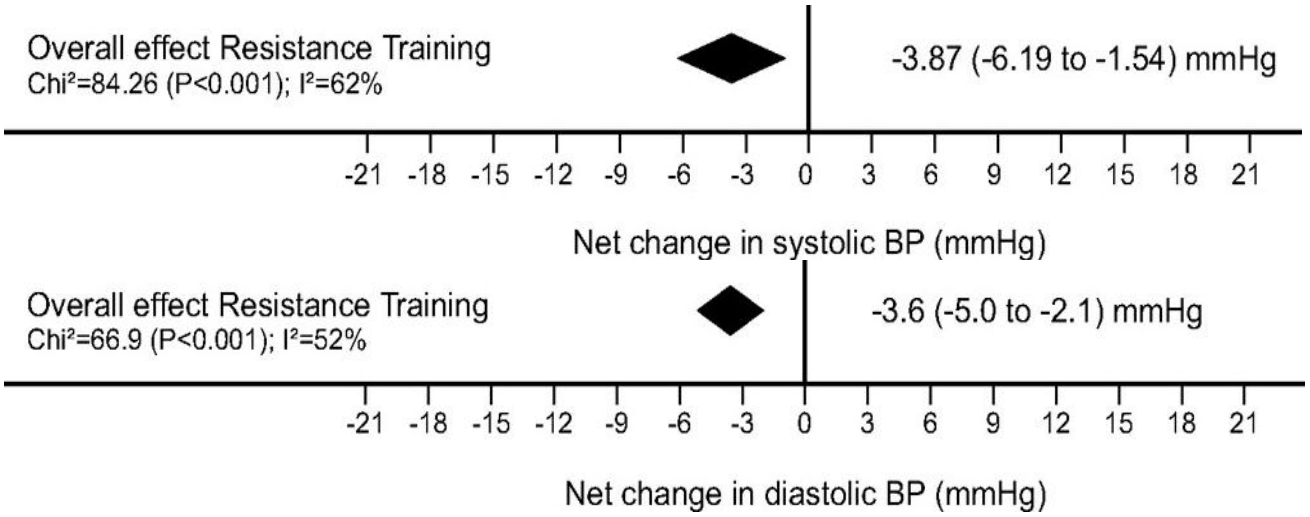
Aerobic training reduces blood pressure



Cornelissen V A , Fagard R H Hypertension 2005;46:667-675

Effect of resistance training on BP:
meta-analysis in normotensives and hypertensives



- **Overall reduced BP BUT no significant BP changes in hypertensives**
- **NO evidence for deterioration in BP control in hypertensives NOR adverse effects**

Cornelissen et al, Hypertension. 2011 Nov;58(5):950-8.

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CHEP Recommendation 2013

I. Lifestyle Management	New Recommendation for 2013
A) Physical Exercise For non-hypertensive individuals (to reduce the possibility of becoming hypertensive) or for hypertensive patients (to reduce their blood pressure) prescribe the accumulation of 30 to 60 minutes of moderate intensity dynamic exercise (such as walking, jogging, cycling or swimming) 4 -7 days per week in addition to the routine activities of daily living *(Grade D)*. Higher intensities of exercise are no more effective *(Grade D)*.	**ADD:** **For non-hypertensive or stage 1 hypertensive individuals, the use of resistance or weight training exercise (such as free weight lifting, fixed-weight lifting, or handgrip exercise) does not adversely influence blood pressure (*Grade D*).**

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The Canadian Hypertension Education Program: 2013 Recommendations

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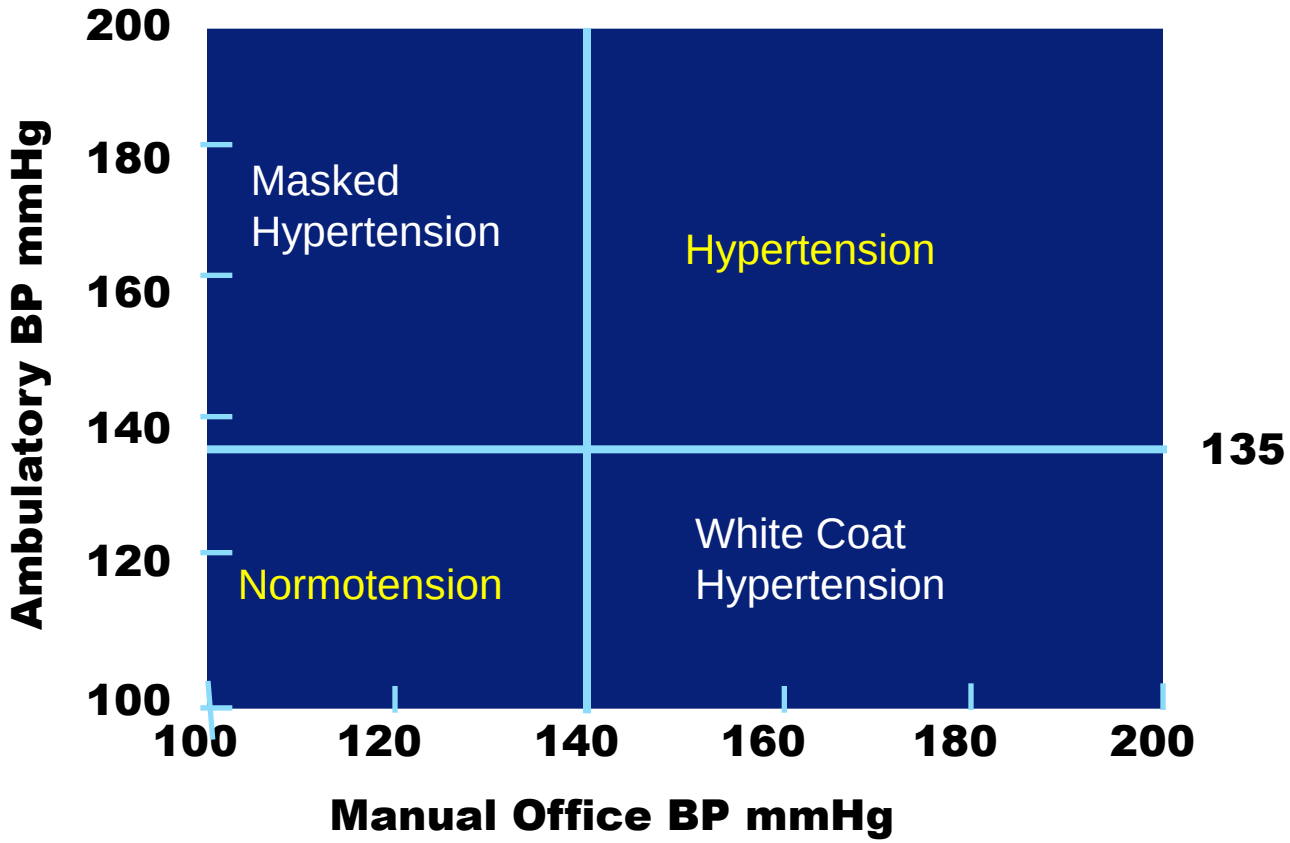
- For your patients
  – ask them to sign up at www.hypertension.ca for free access to the latest information & resources on high blood pressure

- For health care professionals – sign up at www.hypertension.ca for automatic updates and information on current hypertension educational resources

Only relying on manual office pressures misses out on white coat and masked hypertension



From Pickering et al. *Hypertension* 2002;40:795-796

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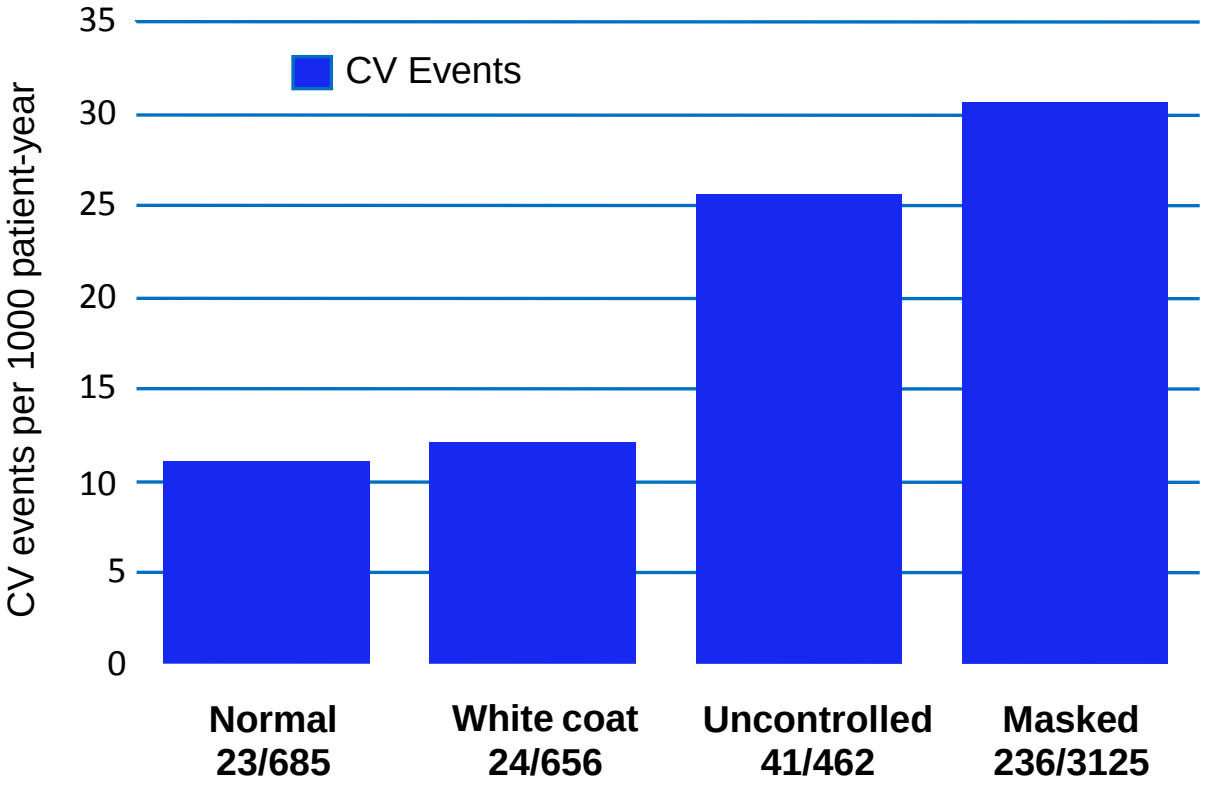
The prognosis of masked hypertension

Prevalence is approximately 10% in hypertensive patients.



Okhubo et al. *J. Am. Coll. Cardiol.* 2005;46;508-515

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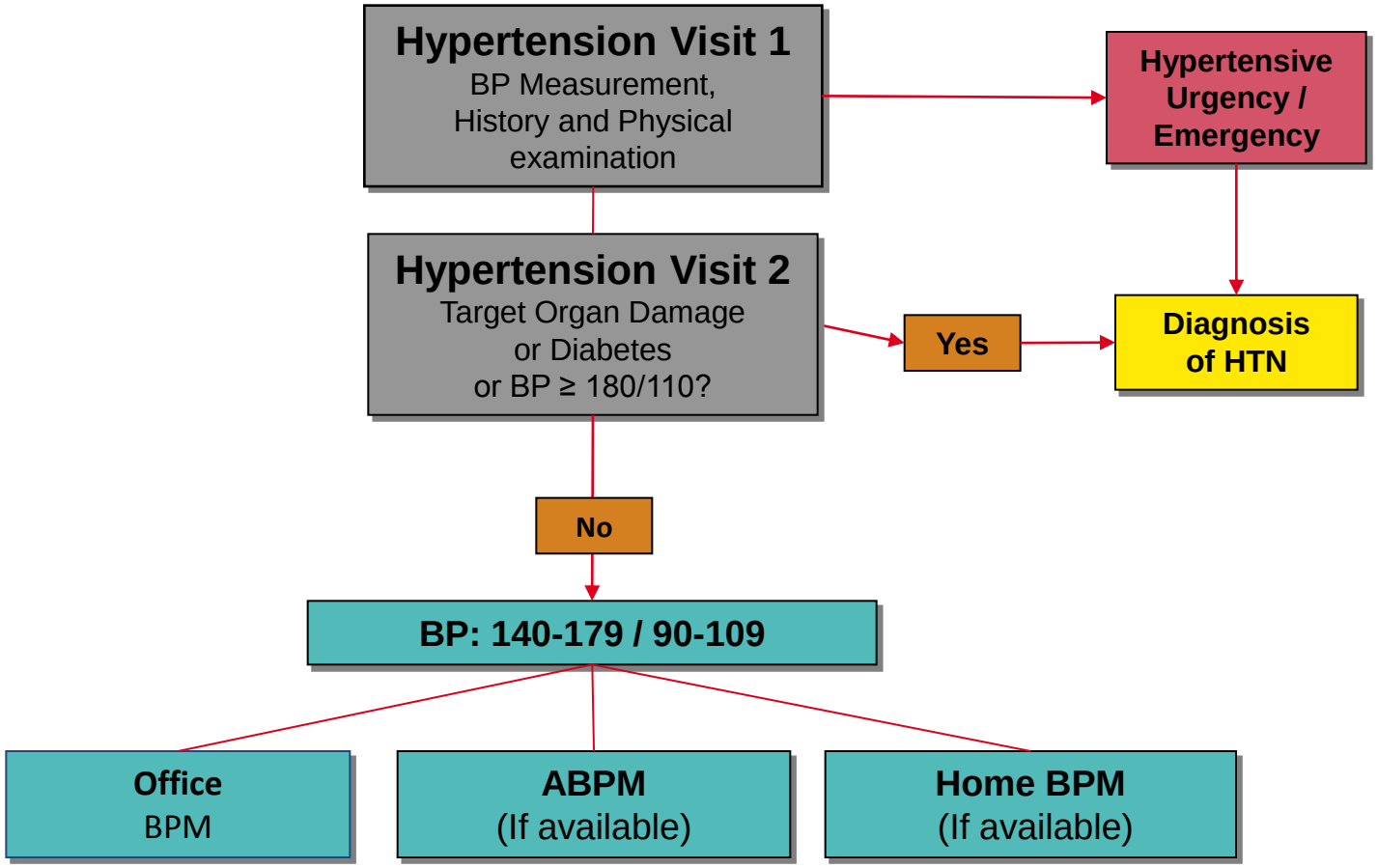
Diagnostic algorithm for hypertension



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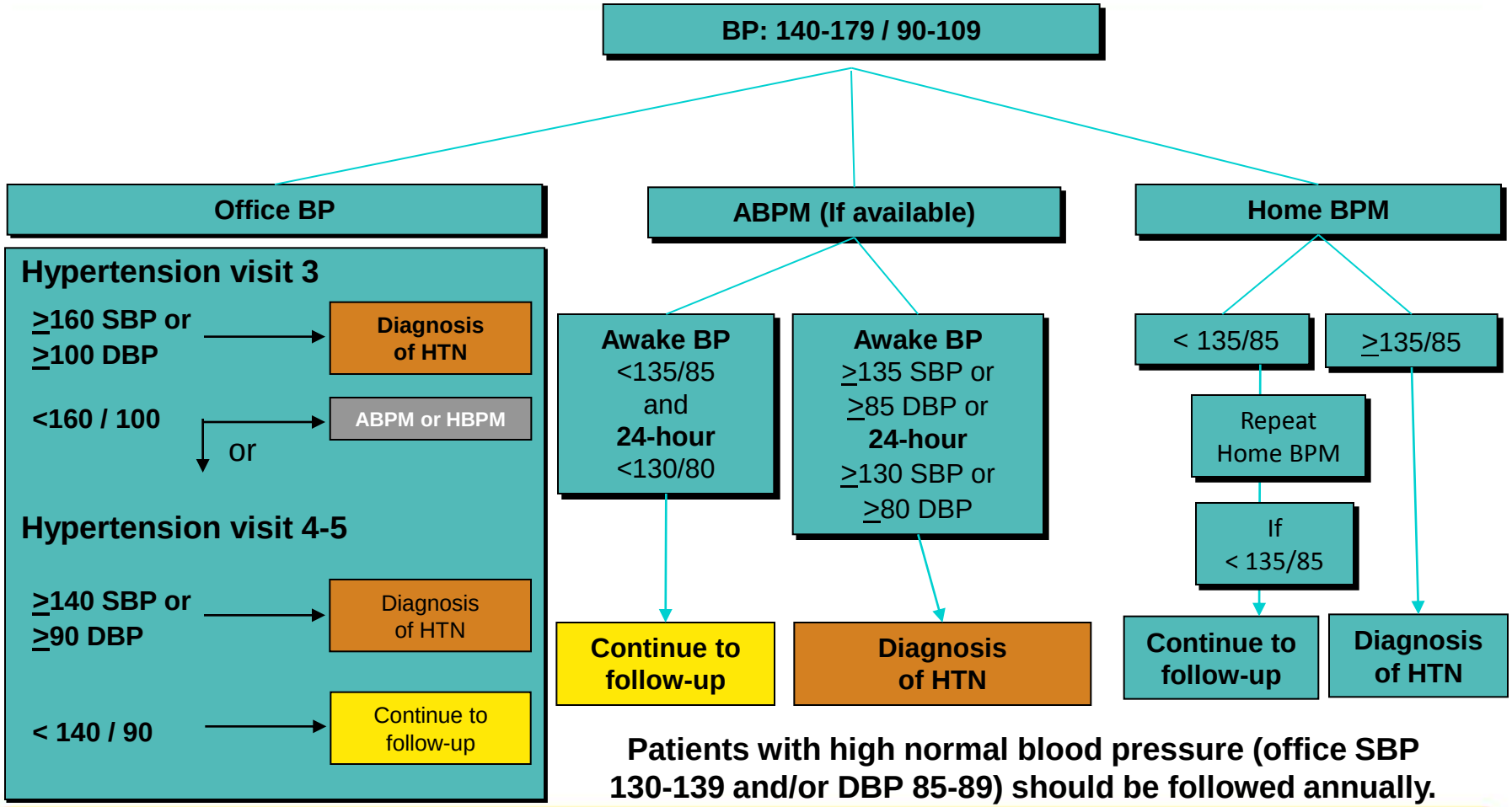
Criteria for the diagnosis of hypertension and recommendations for follow-up



Patients with high normal blood pressure (office SBP 130-139 and/or DBP 85-89) should be followed annually.

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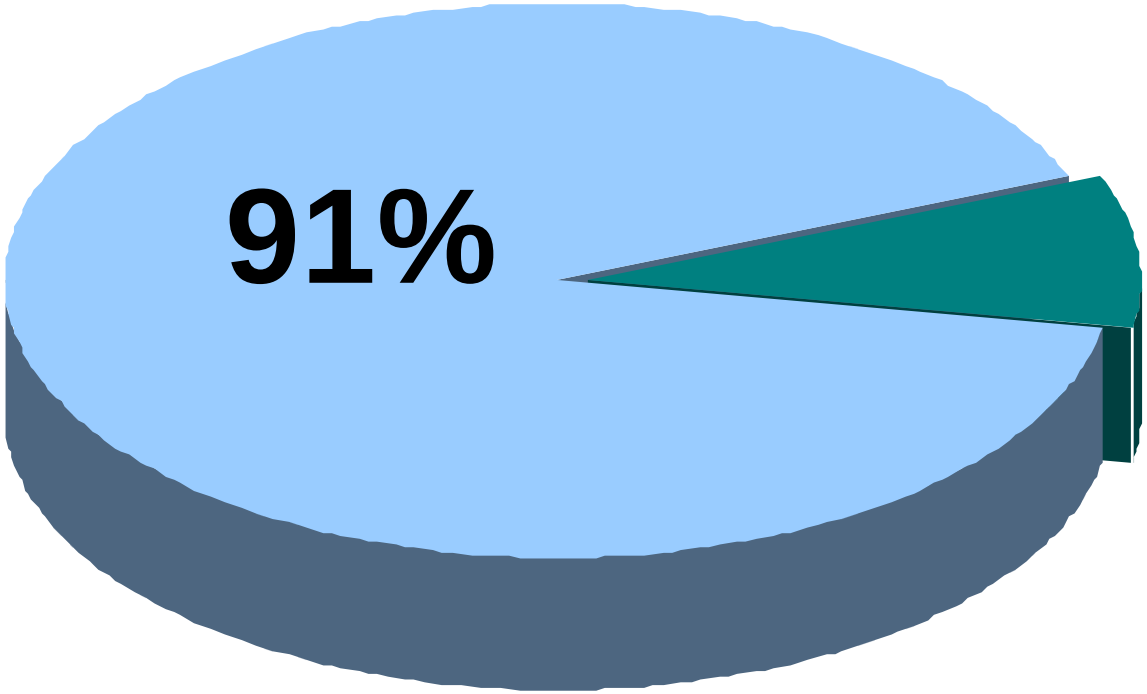
Assess global cardiovascular risk in all hypertensive patients

91% of hypertensive patients have at least 1 additional risk factor



⇑ Risk factors = ⇑ Global CV risk

Rantala A, et al. *J Intern Med* 1999;245;163-74. Wannamethee S, et al. *J Hum Hypertens* 1998;12;735-41

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2013 CHEP Recommendations: assessing cardiovascular risk to improve adherence

Informing patients of their global risk to improve the effectiveness of risk factor modification.

Using analogies that describe comparative risk such as “Cardiovascular Age”, “Vascular Age” or “Heart Age” to inform patients of their risk status.

Informing patients of their global risk improves the effectiveness of risk factor modification

Discussing Coronary Risk with Patients to Improve Blood Pressure Treatment: Secondary Results from the CHECK-UP Study

Steven A. Grover, MD, MPA, FRCPC[1,2,3,5], Ilka Lowensteyn, PhD[1,2], Lawrence Joseph, PhD[3], Mohammed Kaouache, MSc[1,2], Sylvie Marchand, RN[1,2], Louis Coupal, MSc[1,2], and Ghislain Boudreau, PhD[4]

[1]McGill Cardiovascular Health Improvement Program, The McGill University Health Centre, Montreal, Canada; [2]Divisions of General Internal Medicine and Clinical Epidemiology, The McGill University Health Centre, Montreal, Canada; [3]Departments of Medicine and Epidemiology & Biostatistics, McGill University, Montreal, Canada; [4]Medical Division, Pfizer Canada, Montreal, Quebec, Canada; [5]Research Institute of the McGill University Health Centre, Royal Victoria Hospital, Montreal, Quebec, Canada.

Grover SA , et al. *J Gen Intern Med*. 2009;24(1);33–39

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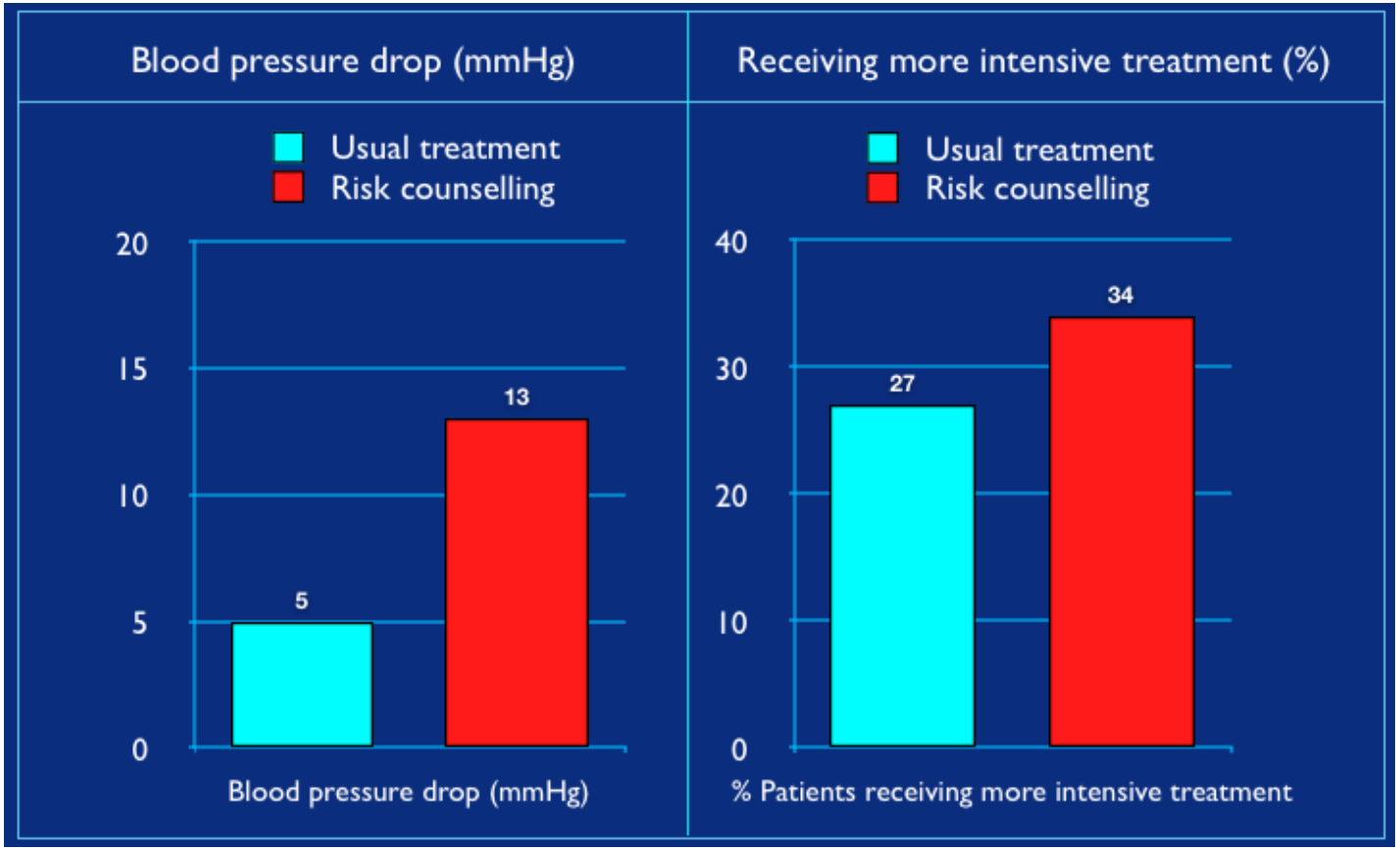
Impact on blood pressure treatment of discussing coronary risk with patients



Grover SA, et al. J Gen Intern Med 2009;*24(1);33-9*

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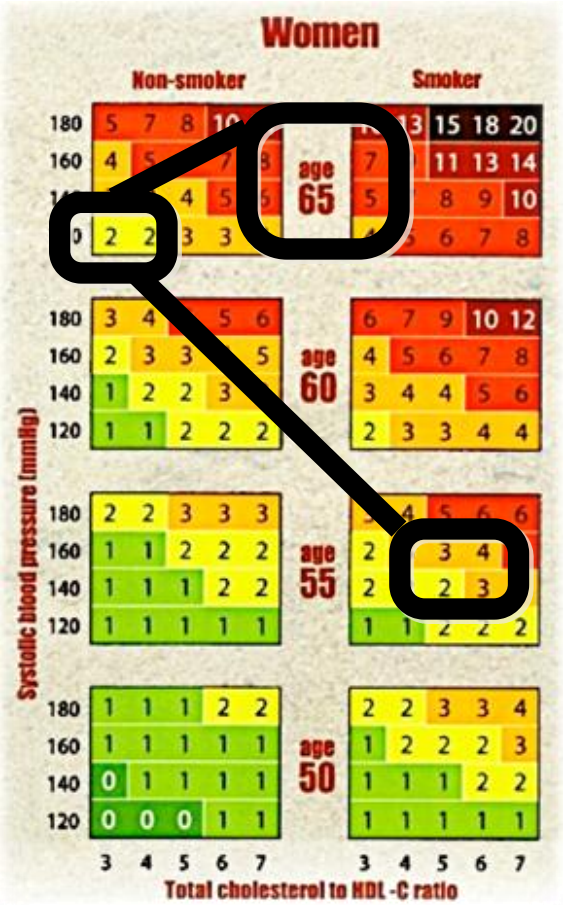
Estimating Vascular Age with SCORE Canada

- Female, age 55
  - Smoker
  - SBP 152/88 mmHg
  - TC/HDL-C ratio 5.9
  - Non diabetic
  - **10-year CVD risk of death is ~3%**

Vascular age: 65



SCORE: Systematic Cerebrovascular and Coronary Risk Evaluation; BP: blood pressure; TC/HDL-C: total cholesterol high-density lipoprotein ratio

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The treatment of hypertension is all about vascular protection

Statins are recommended in high risk hypertensive patients based on having established atherosclerotic disease or at least 3 of the following:

- Male gender
- 55 y or older
- Smoking
- Type 2 Diabetes
- Total-C/HDL-C ratio of 6 or higher
- Premature Family History of CV disease
- Previous Stroke or TIA
- LVH
- ECG abnormalities
- Microalbuminuria or Proteinuria
- Peripheral Vascular Disease

ASCOT-LLA *Lancet* 2003;361:1149-58

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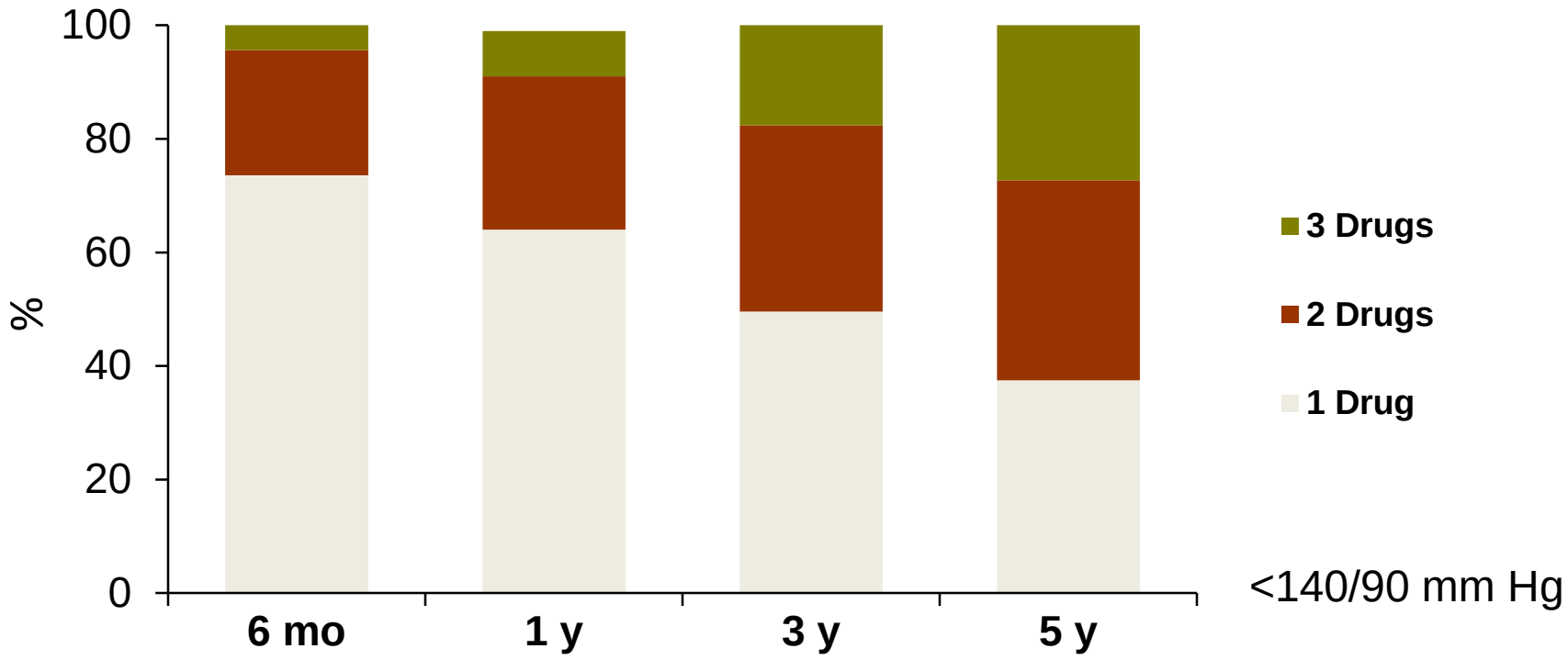
Monotherapy is often not enough: *medication use and BP control in ALLHAT*



Cushman et al. *J Clin Hypertens* 2002;4;393-404

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Single pill combination-based treatment:

- Leads to improved adherence (and decreased medical resource utilization)

  Taylor AA, Shoheiber O. *Congest Heart Fail*. 2003;9:324-32

- Leads to better blood pressure control rates

  Feldman RD, et al. *Hypertension.* 2009;53;646-653

- Leads to reduced hypertension-related CV complication rates

  Corrao G, et al. *Hypertension*. 2011;58:566-72

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Adherence to antihypertensive management can be improved by a multi-pronged approach

- Encourage greater patient responsibility/autonomy in regular monitoring of their blood pressure
- Educate patients and patients' families about their disease/treatment regimens verbally and in writing
- Use an interdisciplinary care approach coordinating with work-site health care givers and pharmacists if available
- Encouraging adherence to therapy by healthcare practitioner-based telephone contact, particularly, over the first three months of therapy

Adherence to antihypertensive management can be improved by a multi-pronged approach-II

- Assess adherence to pharmacological and non-pharmacological therapy at every visit
- Teach patients to take their pills on a regular schedule associated with a routine daily activity e.g. brushing teeth.
- Simplify medication regimens using long-acting once-daily dosing
- Utilize fixed-dose combination pills
- Utilize unit-of-use packaging e.g. blister packaging
- Replacing multiple pill antihypertensive combinations with single pill combinations