

Updated Hypertension Guidelines and the SPRINT Trial

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DISCLOSURES

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2017 ACC/AHA Guidelines: Categories of BP in Adults*

BP Category	SBP		DBP
Normal	<120 mm Hg	And	<80 mm Hg
Elevated	120-129 mm Hg	And	<80 mm Hg
Hypertension	≥130 mmHg	Or	≥80 mmHg
Stage 1	130-139 mmHg	Or	80-89 mmHg
Stage 2	≥140 mm Hg	Or	≥90 mm Hg

*Individuals with SBP and DBP in 2 categories should be designated to the higher BP category. BP measurement based on an average of ≥2 readings obtained on ≥2 occasions.



THE SPRINT TRIAL

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A Randomized Trial of Intensive versus Standard Blood-Pressure Control

The SPRINT Research Group*



The SPRINT research group. NEJM 2015

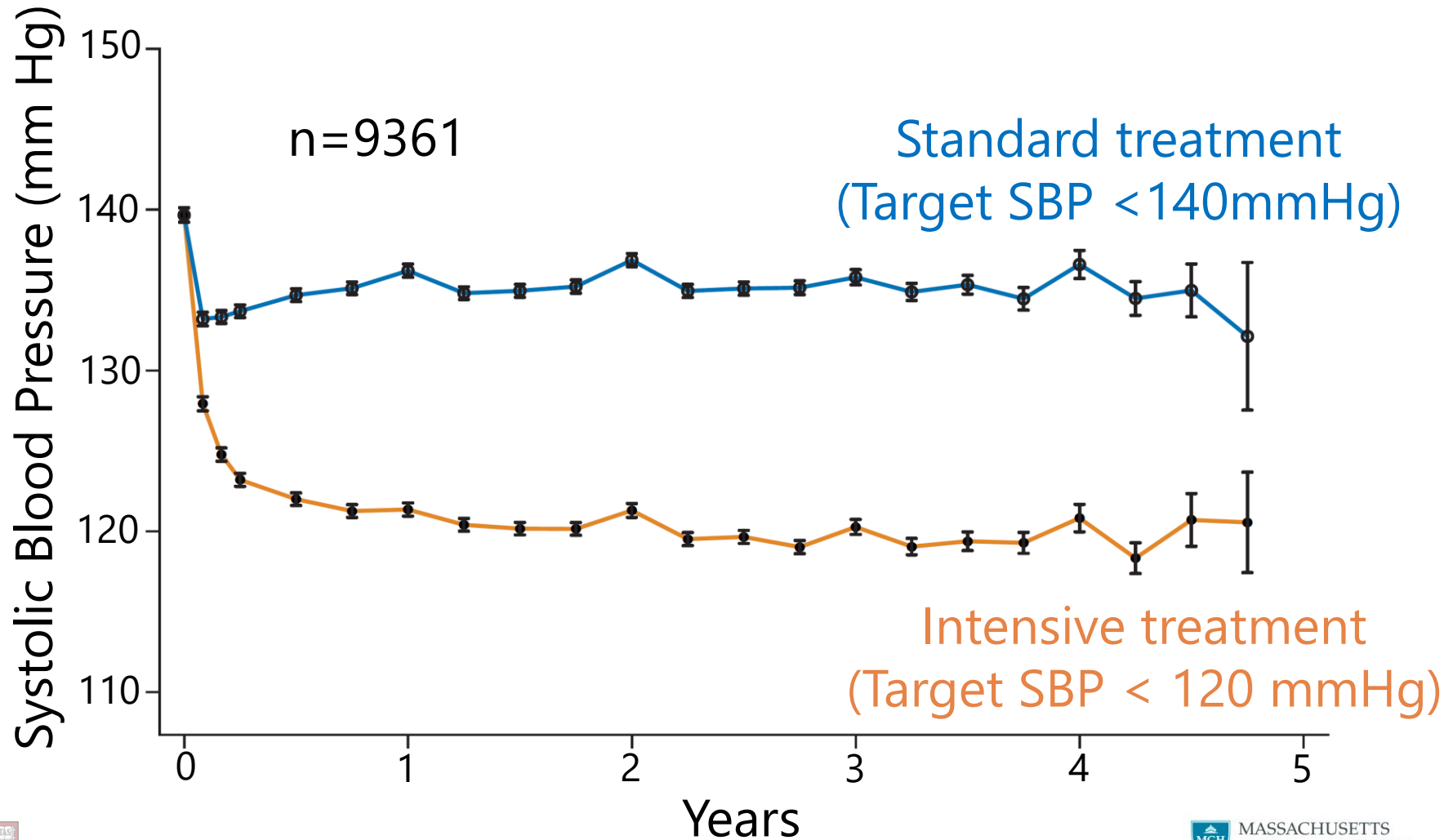


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Systolic BP in the Two Treatment Groups

THE SPRINT TRIAL

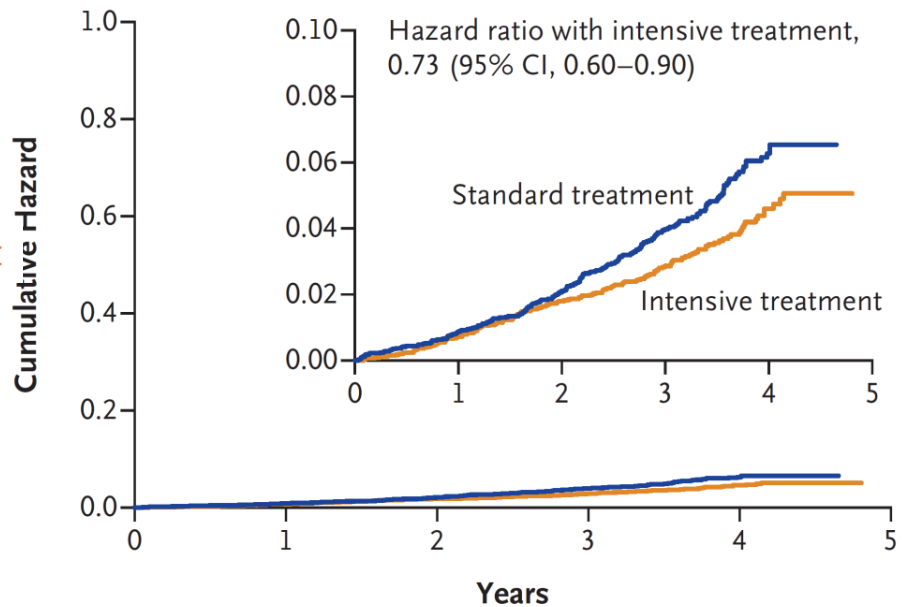
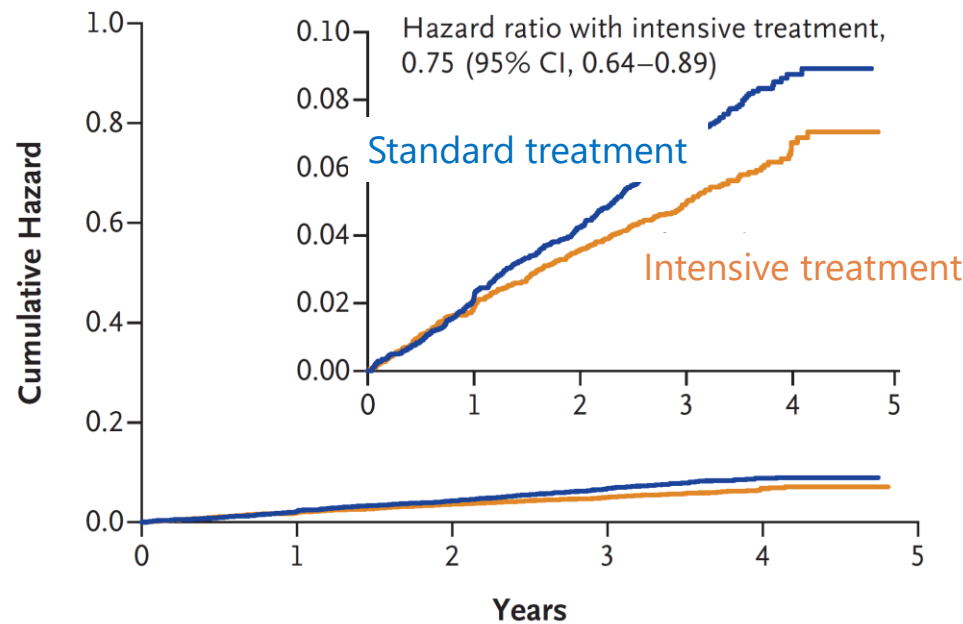


Clinical Outcomes

THE SPRINT TRIAL

Primary outcome:
MI, ACS, CVA, HF or
CV death
HR 0.75, $p < 0.001$

Secondary outcome:
All-cause death
HR 0.73, $p = 0.003$

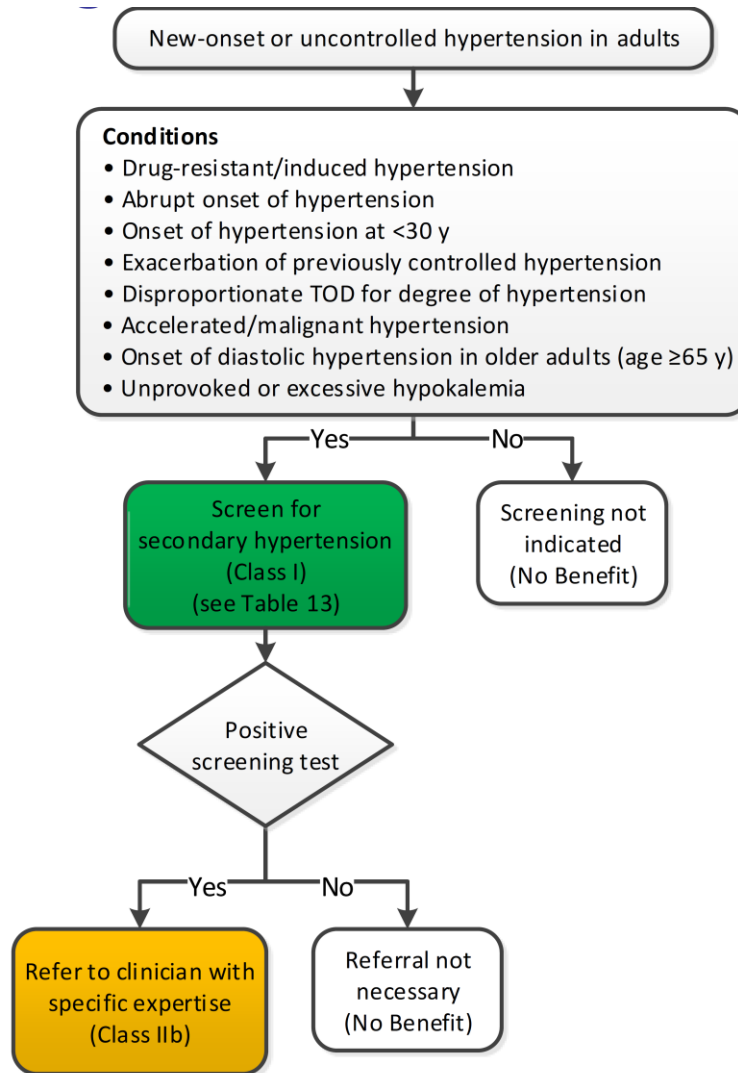


CV Risk Factors Common in Patients with Hypertension

Modifiable Risk Factors	Relatively Fixed Risk Factors
Smoking	CKD
Diabetes mellitus	Family history
Dyslipidemia	Increased age
Overweight/obesity	Low socioeconomic/educational status
Physical inactivity/low fitness	Male sex
Unhealthy diet	Obstructive sleep apnea
	Psychosocial stress



Screening for Secondary Hypertension



*TOD target organ damage such as cerebrovascular disease, hypertensive retinopathy, LVH, left ventricular dysfunction, HF, CAD, CKD, albuminuria, PAD



Causes of Secondary Hypertension With Clinical Indications

Common Causes

Renal parenchymal disease

Renovascular disease

Primary aldosteronism

Obstructive sleep apnea

Drug or alcohol induced

Uncommon Causes

Pheochromocytoma/paraganglioma

Cushing's syndrome

Hypothyroidism

Hyperthyroidism

Aortic coarctation (undiagnosed or repaired)

Primary hyperparathyroidism

Congenital adrenal hyperplasia

Mineralocorticoid excess syndromes other than primary aldosteronism

Acromegaly

Best Proven Nonpharmacological Interventions for Prevention and Treatment of Hypertension

	Nonpharmacological intervention	Dose	Approximate Impact on SBP	
			Hypertension	Normotension
Weight loss	Weight/body fat	Ideal body weight Can aim for at least a 1-kg reduction in weight. Expect about 1 mmHg for every 1 kg reduction in body weight	-5 mmHg	-2/3 mmHg
Healthy diet	DASH dietary patter	Consume a diet rich in fruits, vegetables, whole grains and low fat dairy products with reduced content of saturated and total fat	-11 mmHg	-3 mmHg
Reduced intake of dietary sodium	Dietary sodium	Optimal goal is <1500 mg/d, but aime for at least a 1000-mg/d reduction in most adults	-5/6 mmHg	-2/3 mmHg
Enhanced intake of dietary potassium	Dietary potassium	Aim for 3500-5000 mg/d, preferably by consumption of a diet rich in potassium	-4/5 mmHg	-2 mmHg



Best Proven Non-pharmacological Interventions for Prevention and Treatment of Hypertension

	Nonpharmacological intervention	Dose	Approximate Impact on SBP	
			Hypertension	Normotension
Physical activity	Aerobic	90-150 min/wk 65-75% HR reserve	-5/8 mmHg	-2/4mmHg
	Dynamic resistance	90-150 min/wk 50-80% 1 rep max 6 exercises, 3 sets/exercise, 10 repetitions/set	-4 mmHg	-2 mmHg
	Isometric resistance	4x2 min (hand grip), 1 min rest between exercises, 30-40% max voluntary contractions, 3 sessions/wk 8-10 wk	-5 mmHg	-4 mmHg
Moderation in alcohol intake	Alcohol consumption	Men: ≤ 2 drinks daily Women: ≤1 drink daily	-4 mmHg	-3 mmHg

BP Thresholds and Recommendations for Treatment and Follow-up

