

The 2017 ACC/AHA Hypertension Guidelines *Highlight Reel*

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Marianne Novelli, MD

Diane Sanders-Cepeda, DO CMD

Defining and Measuring BP

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			
Stage 1	130–139 mm Hg	or	80–89 mm Hg
Stage 2	≥140 mm Hg	or	≥90 mm Hg

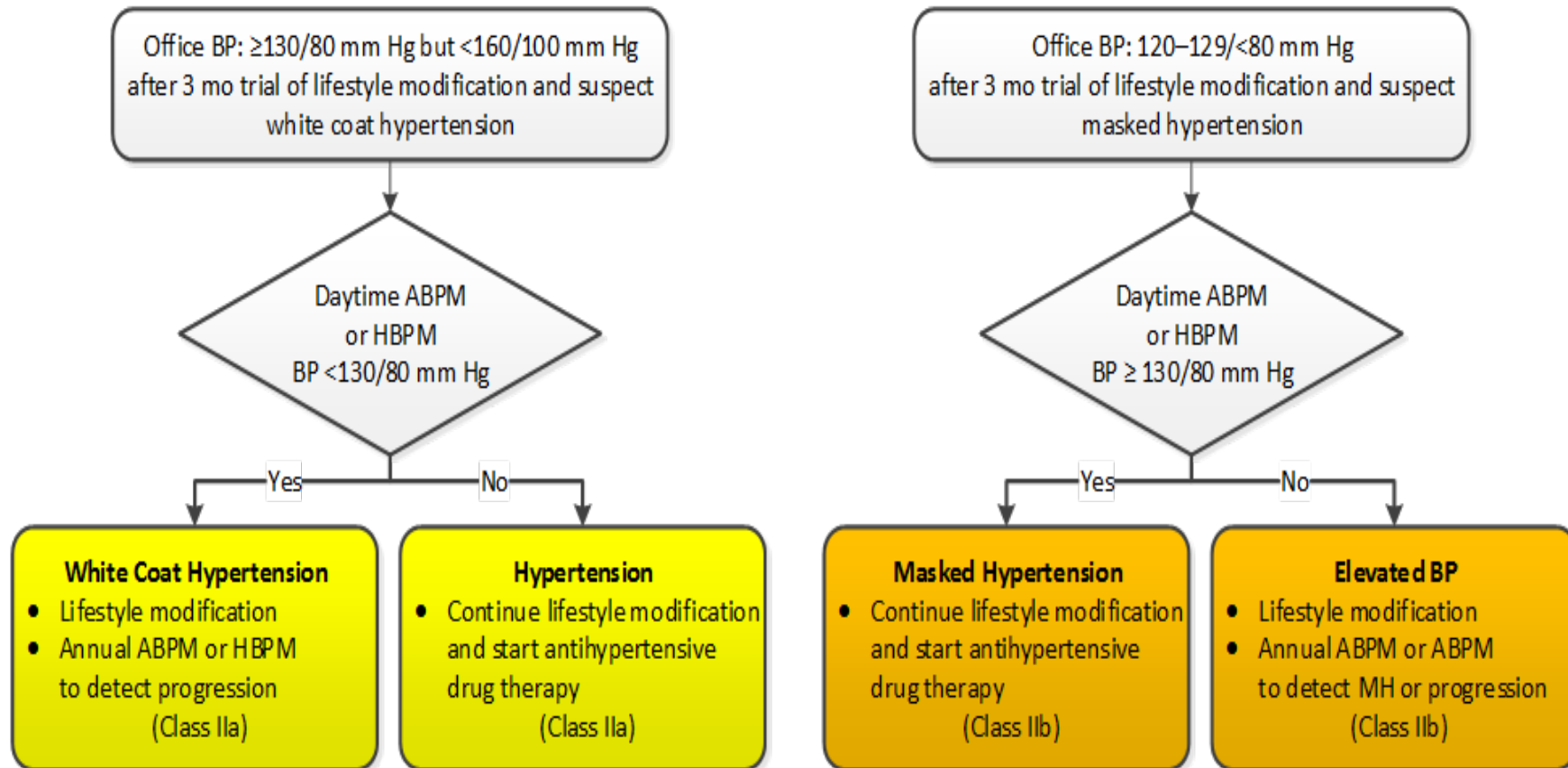
*Individuals with SBP and DBP in 2 categories should be designated to the higher BP category.

BP indicates blood pressure (based on an average of ≥2 careful readings obtained on ≥2 occasions, as detailed in DBP, diastolic blood pressure; and SBP systolic blood pressure.

Checklist for Accurate Measurement of BP

Key Steps for Proper BP Measurements
Step 1: Properly prepare the patient.
Step 2: Use proper technique for BP measurements.
Step 3: Take the proper measurements needed for diagnosis and treatment of elevated BP/hypertension.
Step 4: Properly document accurate BP readings.
Step 5: Average the readings.
Step 6: Provide BP readings to patient.

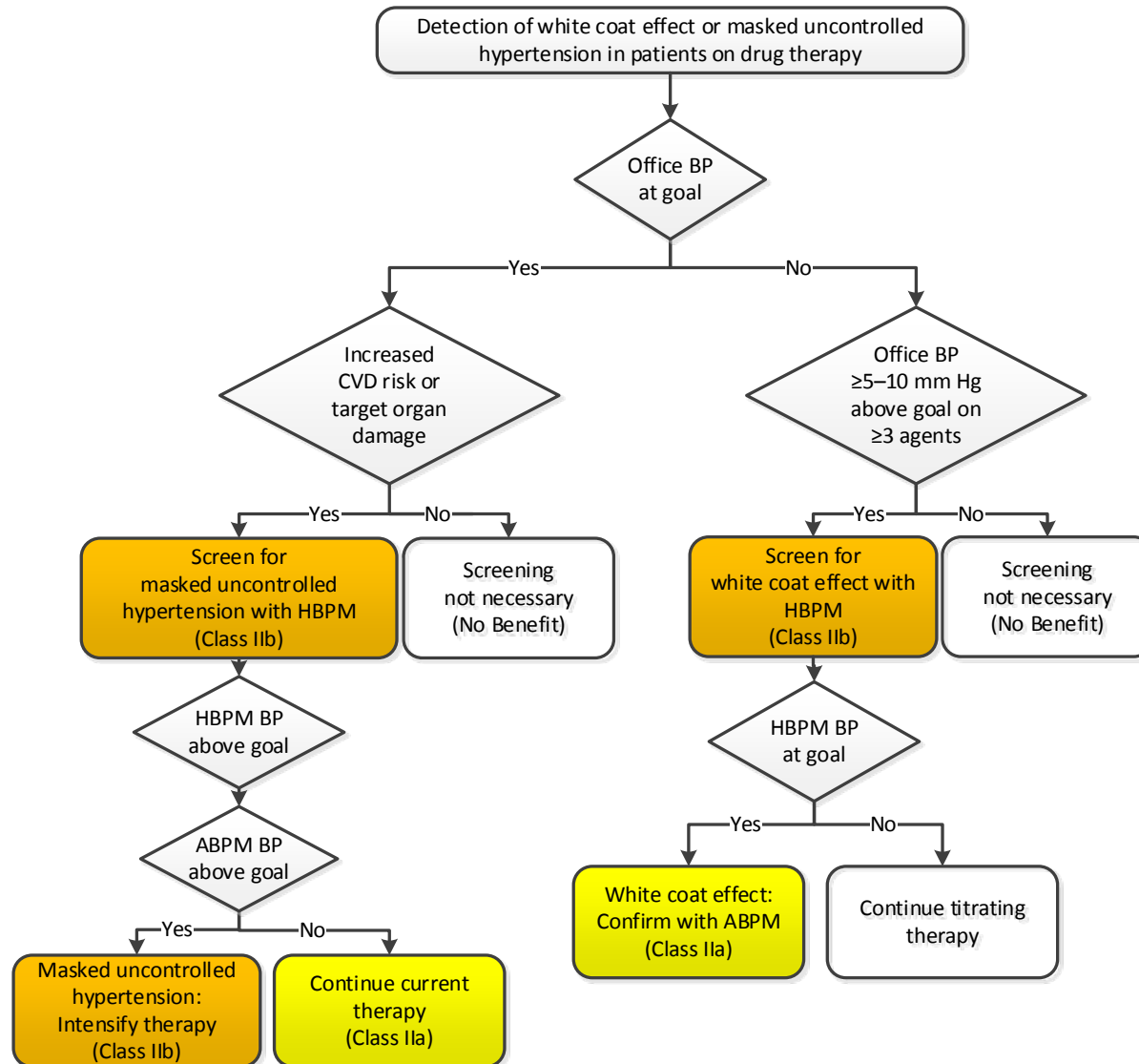
Detection of White Coat Hypertension or Masked Hypertension in Patients Not on Drug Therapy



Colors correspond to Class of Recommendation in Table 1.

ABPM indicates ambulatory blood pressure monitoring; BP, blood pressure; and HBPM, home blood pressure monitoring.

Detection of White Coat Effect or Masked Uncontrolled Hypertension in Patients on Drug Therapy

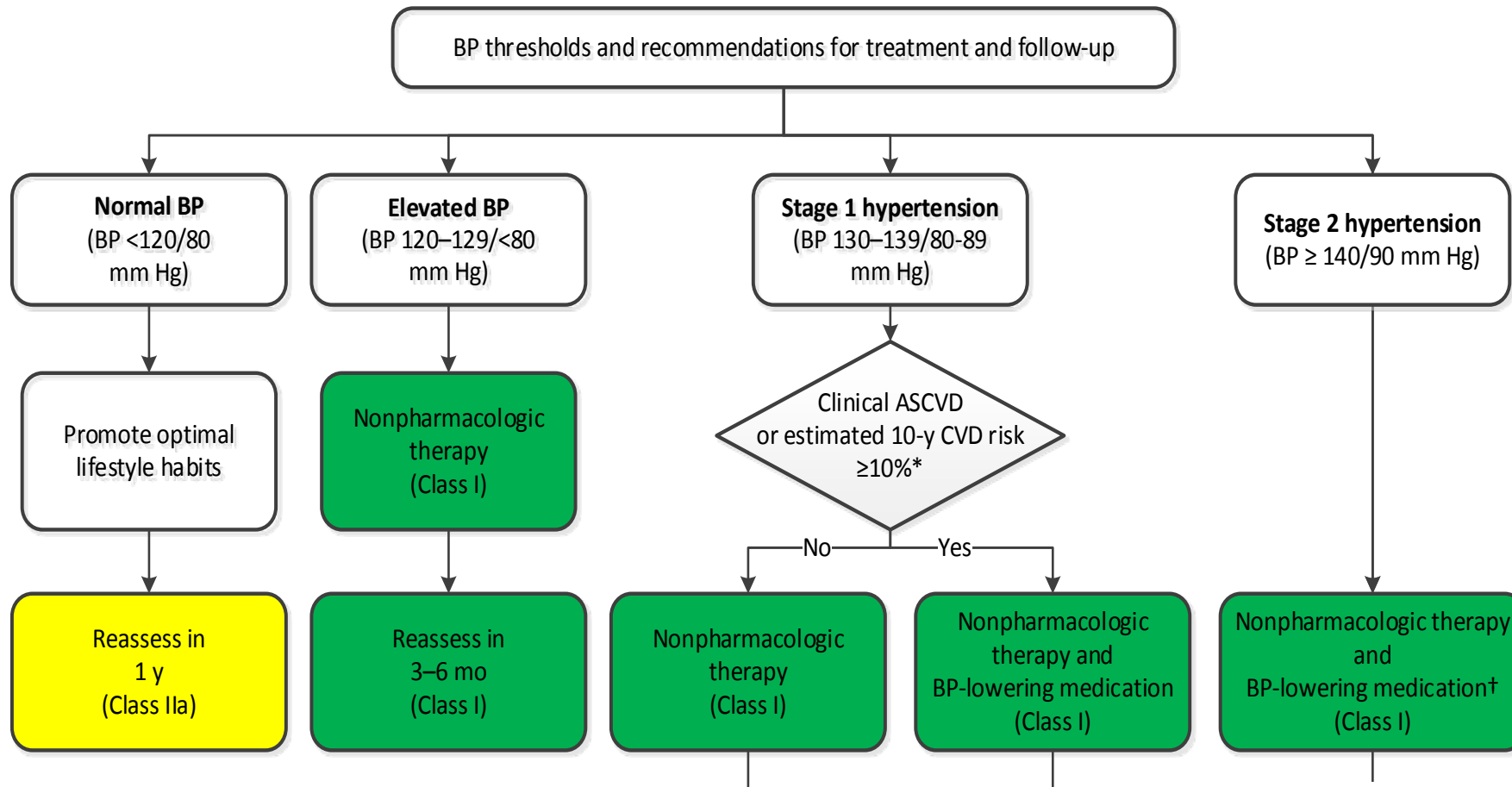


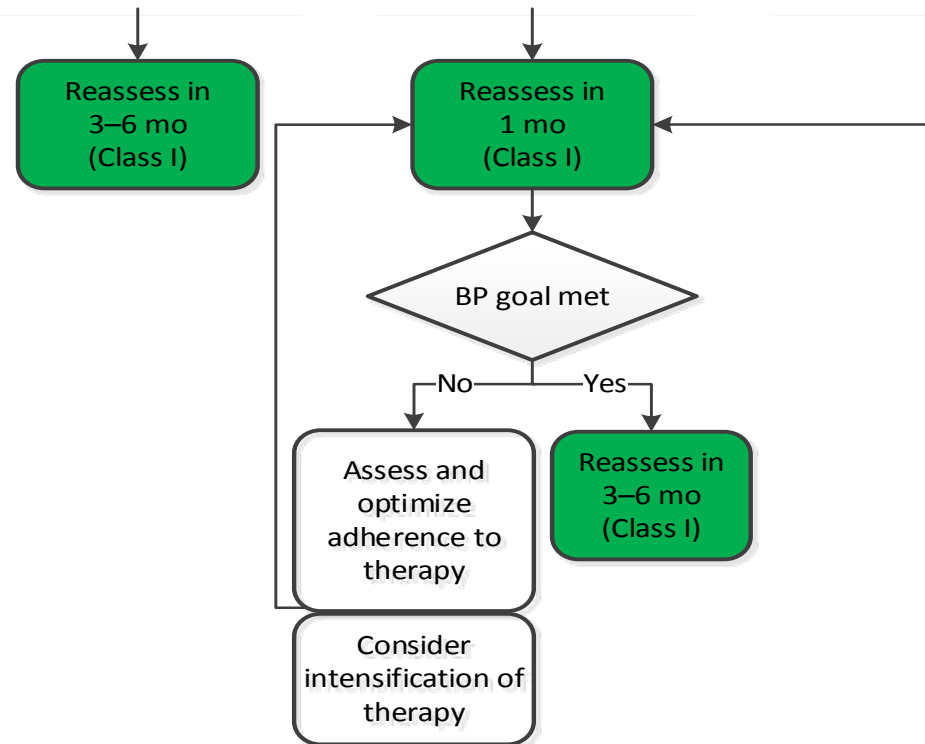
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ABPM indicates ambulatory blood pressure monitoring; BP, blood pressure; and HBPM, home blood pressure monitoring.

Treatment Recommendations

Blood Pressure (BP) Thresholds and Recommendations for Treatment and Follow-Up (continued on next slide)





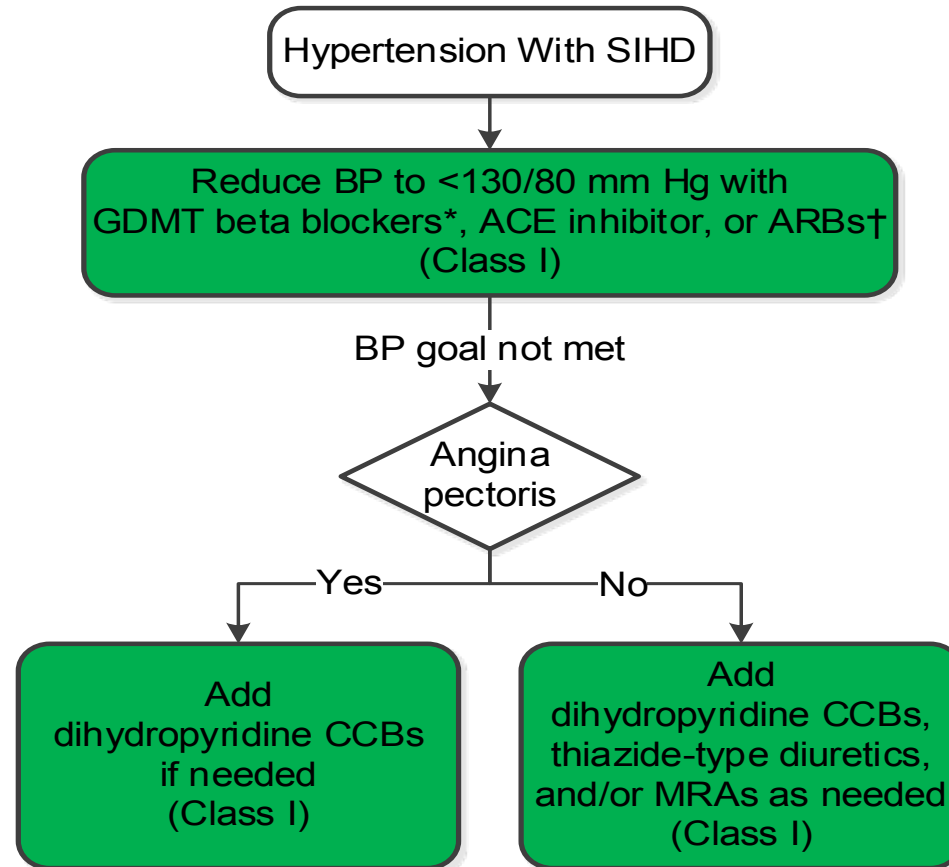
Colors correspond to Class of Recommendation in Table 1.

*Using the ACC/AHA Pooled Cohort Equations. Note that patients with DM or CKD are automatically placed in the high-risk category. For initiation of RAS inhibitor or diuretic therapy, assess blood tests for electrolytes and renal function 2 to 4 weeks after initiating therapy.

†Consider initiation of pharmacological therapy for stage 2 hypertension with 2 antihypertensive agents of different classes. Patients with stage 2 hypertension and BP $\geq 160/100$ mm Hg should be promptly treated, carefully monitored, and subject to upward medication dose adjustment as necessary to control BP. Reassessment includes BP measurement, detection of orthostatic hypotension in selected patients (e.g., older or with postural symptoms), identification of white coat hypertension or a white coat effect, documentation of adherence, monitoring of the response to therapy, reinforcement of the importance of adherence, reinforcement of the importance of treatment, and assistance with treatment to achieve BP target.

*Hypertension in Patients with
Comorbidities*

Management of Hypertension in Patients With SIHD



Colors correspond to Class of Recommendation in Table 1.

*GDMT beta blockers for BP control or relief of angina include carvedilol, metoprolol tartrate, metoprolol succinate, nadolol, bisoprolol, propranolol, and timolol. Avoid beta blockers with intrinsic sympathomimetic activity. The beta blocker atenolol should not be used because it is less effective than placebo in reducing cardiovascular events.

†If needed for BP control.

•ACE indicates angiotensin-converting enzyme; ARB, angiotensin receptor blocker; BP, blood pressure; CCB, calcium channel blocker; GDMT, guideline-directed management and therapy; and SIHD, stable ischemic heart disease.

Heart Failure

COR	LOE	Recommendation for Prevention of HF in Adults With Hypertension
I	SBP: B-R	In adults at increased risk of HF, the optimal BP in those with hypertension should be less than 130/80 mm Hg.
	DBP: C-EO	

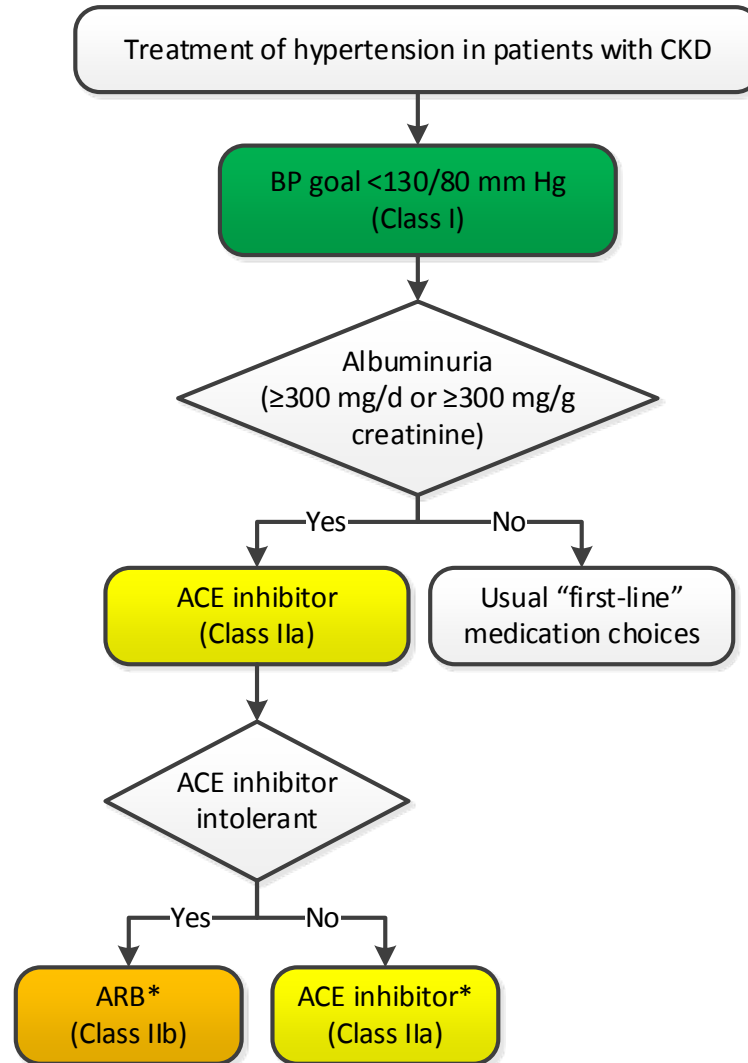
Heart Failure With Reduced Ejection Fraction

COR	LOE	Recommendations for Treatment of Hypertension in Patients With HFrEF
I	C-EO	Adults with HFrEF and hypertension should be prescribed GDMT titrated to attain a BP of less than 130/80 mm Hg.
III: No Benefit	B-R	Nondihydropyridine CCBs are not recommended in the treatment of hypertension in adults with HFrEF.

Heart Failure With Preserved Ejection Fraction

COR	LOE	Recommendations for Treatment of Hypertension in Patients With HF_pEF
I	C-EO	In adults with HF _p EF who present with symptoms of volume overload, diuretics should be prescribed to control hypertension.
I	C-LD	Adults with HF _p EF and persistent hypertension after management of volume overload should be prescribed ACE inhibitors or ARBs and beta blockers titrated to attain SBP of less than 130 mm Hg.

Management of Hypertension in Patients With CKD

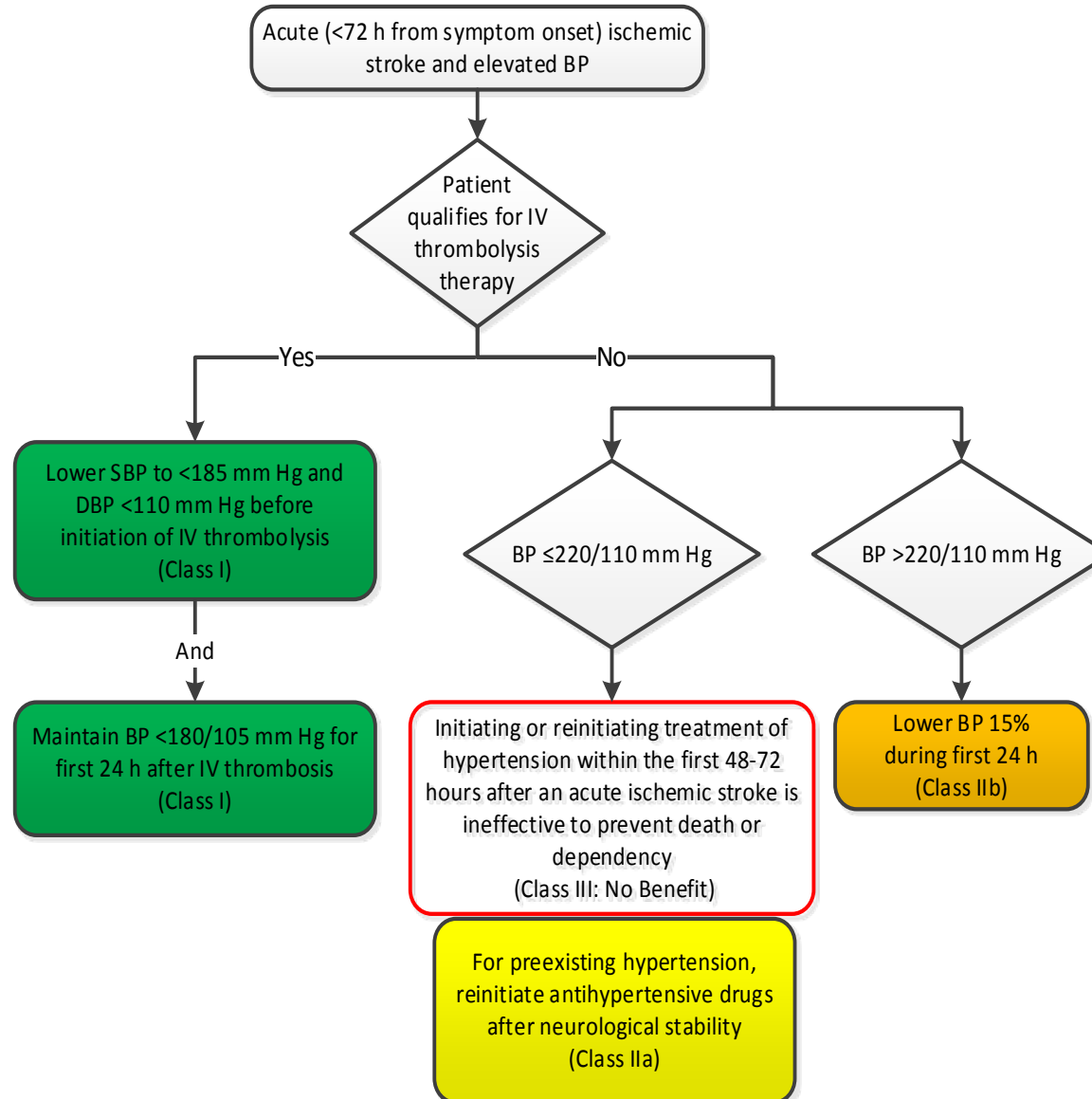


•Colors correspond to Class of Recommendation in Table 1.

•*CKD stage 3 or higher or stage 1 or 2 with albuminuria ≥ 300 mg/d or ≥ 300 mg/g creatinine.

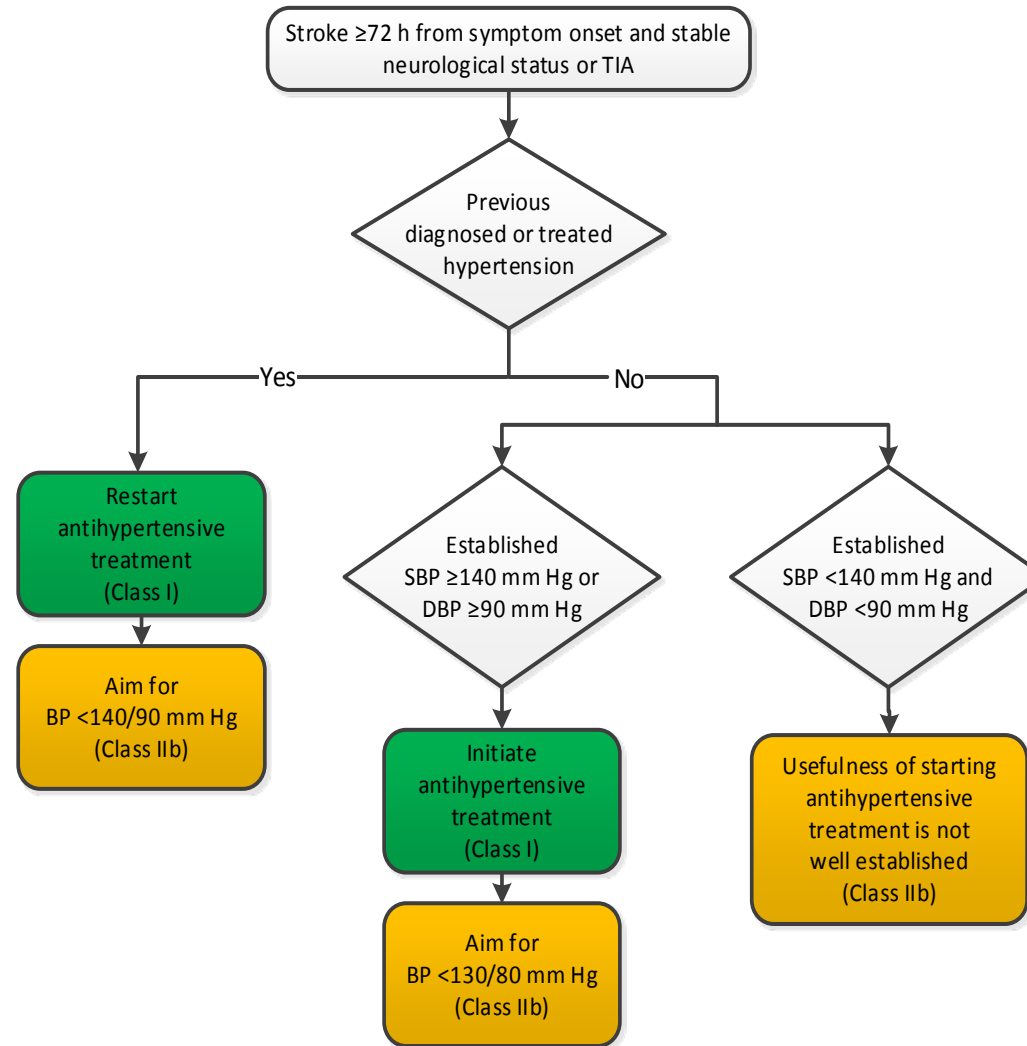
•ACE indicates angiotensin-converting enzyme; ARB, angiotensin receptor blocker; BP blood pressure; and CKD, chronic kidney disease.

Management of Hypertension in Patients With Acute Ischemic Stroke



Colors correspond to Class of Recommendation in Table 1.
BP indicates blood pressure; DBP, diastolic blood pressure; IV, intravenous; and SBP, systolic blood pressure.

Management of Hypertension in Patients With a Previous History of Stroke (Secondary Stroke Prevention)



Colors correspond to Class of Recommendation in Table 1.
DBP indicates diastolic blood pressure; SBP, systolic blood pressure; and TIA, transient ischemic attack.

Diabetes Mellitus

COR	LOE	Recommendations for Treatment of Hypertension in Patients With DM
I	SBP: B-R^{SR}	In adults with DM and hypertension, antihypertensive drug treatment should be initiated at a BP of 130/80 mm Hg or higher with a treatment goal of less than 130/80 mm Hg.
	DBP: C-EO	
I	A^{SR}	In adults with DM and hypertension, all first-line classes of antihypertensive agents (i.e., diuretics, ACE inhibitors, ARBs, and CCBs) are useful and effective.
IIb	B-NR	In adults with DM and hypertension, ACE inhibitors or ARBs may be considered in the presence of albuminuria.

SR indicates systematic review.

Special Patient Groups

Age-Related Issues

COR	LOE	Recommendations for Treatment of Hypertension in Older Persons
I	A	Treatment of hypertension with a SBP treatment goal of less than 130 mm Hg is recommended for noninstitutionalized ambulatory community-dwelling adults (≥ 65 years of age) with an average SBP of 130 mm Hg or higher.
Ila	C-EO	For older adults (≥ 65 years of age) with hypertension and a high burden of comorbidity and limited life expectancy, clinical judgment, patient preference, and a team-based approach to assess risk/benefit is reasonable for decisions regarding intensity of BP lowering and choice of antihypertensive drugs.

Racial and Ethnic Differences in Treatment

COR	LOE	Recommendations for Race and Ethnicity
I	B-R	In black adults with hypertension but without HF or CKD, including those with DM, initial antihypertensive treatment should include a thiazide-type diuretic or CCB.
I	C-LD	Two or more antihypertensive medications are recommended to achieve a BP target of less than 130/80 mm Hg in most adults with hypertension, especially in black adults with hypertension.

*Nonpharmacological
Interventions*

Best Proven Nonpharmacological Interventions for Prevention and Treatment of Hypertension*

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

*Type, dose, and expected impact on BP in adults with a normal BP and with hypertension.

DASH indicates Dietary Approaches to Stop Hypertension; and SBP, systolic blood pressure.

Resources: Your Guide to Lowering Your Blood Pressure With DASH—How Do I Make the DASH?

Available at: <https://www.nhlbi.nih.gov/health/resources/heart/hbp-dash-how-to>.

Top 10 Dash Diet Tips. Available at: http://dashdiet.org/dash_diet_tips.asp

Best Proven Nonpharmacological Interventions for Prevention and Treatment of Hypertension* (cont.)

	Nonpharmacological Intervention	Dose	Approximate Impact on SBP	
			Hypertension	Normotension
Physical activity	Aerobic	<ul style="list-style-type: none"> ● 90–150 min/wk ● 65%–75% heart rate reserve 	-5/8 mm Hg	-2/4 mm Hg
	Dynamic resistance	<ul style="list-style-type: none"> ● 90–150 min/wk ● 50%–80% 1 rep maximum ● 6 exercises, 3 sets/exercise, 10 repetitions/set 	-4 mm Hg	-2 mm Hg
	Isometric resistance	<ul style="list-style-type: none"> ● 4 × 2 min (hand grip), 1 min rest between exercises, 30%–40% maximum voluntary contraction, 3 sessions/wk ● 8–10 wk 	-5 mm Hg	-4 mm Hg
Moderation in alcohol intake	Alcohol consumption	<p>In individuals who drink alcohol, reduce alcohol[†] to:</p> <ul style="list-style-type: none"> ● Men: ≤2 drinks daily ● Women: ≤1 drink daily 	-4 mm Hg	-3 mm

*Type, dose, and expected impact on BP in adults with a normal BP and with hypertension.

†In the United States, one “standard” drink contains roughly 14 g of pure alcohol, which is typically found in 12 oz of regular beer (usually about 5% alcohol), 5 oz of wine (usually about 12% alcohol), and 1.5 oz of distilled spirits (usually about 40% alcohol).

