

New Hypertension Guidelines 2017

New Hypertension Guidelines

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Rationale For New HTN Guidelines

2.3. Population Risk

In 2010, high BP was the leading cause of death and disability-adjusted life years worldwide (1, 2). In the United States, hypertension (see Section 3.1 for definition) accounted for more CVD deaths than any other modifiable CVD risk factor and was second only to cigarette smoking as a preventable cause of death for any reason (3). In a follow-up study of 23,272 U.S. NHANES (National Health and Nutrition Examination Survey) participants, >50% of deaths from coronary heart disease (CHD) and stroke occurred among individuals with hypertension (4).

Rationale For New HTN Guidelines

2.1. Observational Relationship

Observational studies have demonstrated graded associations between higher systolic blood pressure (SBP) and diastolic blood pressure (DBP) and increased CVD risk (1, 2). In a meta-analysis of 61 prospective studies, the risk of CVD increased in a log-linear fashion from SBP levels <115 mm Hg to >180 mm Hg and from DBP levels <75 mm Hg to >105 mm Hg (1). In that analysis, 20 mm Hg higher SBP and 10 mm Hg higher DBP were each associated with a doubling in the risk of death from stroke, heart disease, or other vascular disease. In a separate observational study including >1 million adult patients ≥30 years of age, higher SBP and DBP were associated with increased risk of CVD incidence and angina, myocardial infarction (MI), HF, stroke, peripheral artery disease (PAD), and abdominal aortic aneurysm, each evaluated separately (2). An increased risk of CVD associated with higher SBP and DBP has been reported across a broad age spectrum, from 30 years to >80 years of age.

Rationale For New HTN Guidelines

. Data from the most recent meta-analysis (42 trials and 144,220 patients) (5) demonstrate a linear association between mean achieved SBP and risk of CVD mortality with the lowest risk at 120 to 124 mm Hg. The totality of the available information provides evidence that a lower BP target is generally better than a higher BP target and that some patients will benefit from an SBP treatment goal <120 mm Hg, especially those at high risk of CVD (15). The specific

Rationale For New HTN Guidelines

- **They will save lives.**
- **If implemented, estimate for
> 20,000 fewer deaths/year in
USA.**

2017 ACC/AHA/AAPA/ABC/ACPM/AGS/ APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults

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Classification of 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.

Prevalence of Hypertension Based on 2 SBP/DBP Thresholds*†

	SBP/DBP \geq 130/80 mm Hg or Self-Reported Antihypertensive Medication†		SBP/DBP \geq 140/90 mm Hg or Self-Reported Antihypertensive Medication‡	
Overall, crude	46%		32%	
	Men (n=4717)	Women (n=4906)	Men (n=4717)	Women (n=4906)
Overall, age-sex adjusted	48%	43%	31%	32%
Age group, y				
20–44	30%	19%	11%	10%
45–54	50%	44%	33%	27%
55–64	70%	63%	53%	52%
65–74	77%	75%	64%	63%
75+	79%	85%	71%	78%
Race-ethnicity §				
Non-Hispanic White	47%	41%	31%	30%
Non-Hispanic Black	59%	56%	42%	46%
Non-Hispanic Asian	45%	36%	29%	27%
Hispanic	44%	42%	27%	32%

The prevalence estimates have been rounded to the nearest full percentage.

*130/80 and 140/90 mm Hg in 9623 participants (\geq 20 years of age) in NHANES 2011–2014.

†BP cutpoints for definition of hypertension in the present guideline.

‡BP cutpoints for definition of hypertension in JNC 7.

§ Adjusted to the 2010 age-sex distribution of the U.S. adult population.

BP indicates blood pressure; DBP, diastolic blood pressure; NHANES, National Health and Nutrition Examination Survey; and SBP, systolic blood pressure.

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BP and CVD Risk

Coexistence of Hypertension and Related Chronic Conditions

COR	LOE	Recommendation for Coexistence of Hypertension and Related Chronic Conditions
I	B-NR	Screening for and management of other modifiable CVD risk factors are recommended in adults with hypertension.

CVD Risk Factors Common in Patients With Hypertension

Modifiable Risk Factors*	Relatively Fixed Risk Factors†
<ul style="list-style-type: none">• Current cigarette smoking, secondhand smoking• Diabetes mellitus• Dyslipidemia/hypercholesterolemia• Overweight/obesity• Physical inactivity/low fitness• Unhealthy diet	<ul style="list-style-type: none">• CKD• Family history• Increased age• Low socioeconomic/educational status• Male sex• Obstructive sleep apnea• Psychosocial stress

*Factors that can be changed and, if changed, may reduce CVD risk.

†Factors that are difficult to change (CKD, low socioeconomic/educational status, obstructive sleep apnea, cannot be changed (family history, increased age, male sex), or, if changed through the use of current intervention techniques, may not reduce CVD risk (psychosocial stress).

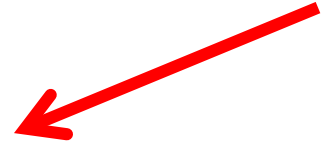
CKD indicates chronic kidney disease; and CVD, cardiovascular disease.

Out-of-Office and Self-Monitoring of BP

COR	LOE	Recommendation for Out-of-Office and Self-Monitoring of BP
I	A ^{SR}	<u>Out-of-office BP measurements are recommended to confirm the diagnosis of hypertension and for titration of BP-lowering medication, in conjunction with telehealth counseling or clinical interventions.</u>

SR indicates systematic review.

BP Patterns Based on Office and Out-of-Office Measurements



	Office/Clinic/Healthcare Setting	Home/Nonhealthcare/ABPM Setting
Normotensive	No hypertension	No hypertension
Sustained hypertension	Hypertension	Hypertension
Masked hypertension	No hypertension	Hypertension
White coat hypertension	Hypertension	No hypertension

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

Original Article

Relationship between Clinic and Ambulatory Blood-Pressure Measurements and Mortality

José R. Banegas, M.D., Luis M. Ruilope, M.D., Alejandro de la Sierra, M.D., Ernest Vinyoles, M.D., Manuel Gorostidi, M.D., Juan J. de la Cruz, M.Sc., Gema Ruiz-Hurtado, Ph.D., Julián Segura, M.D., Fernando Rodríguez-Artalejo, M.D., and Bryan Williams, M.D.

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Study Overview

- In a registry study of 63,910 adults, 24-hour ambulatory BP was a stronger predictor of mortality than BP measured in the clinic.
- Masked hypertension (normal BP in the clinic but elevated ambulatory BP) was associated with a greater risk of death than sustained hypertension.

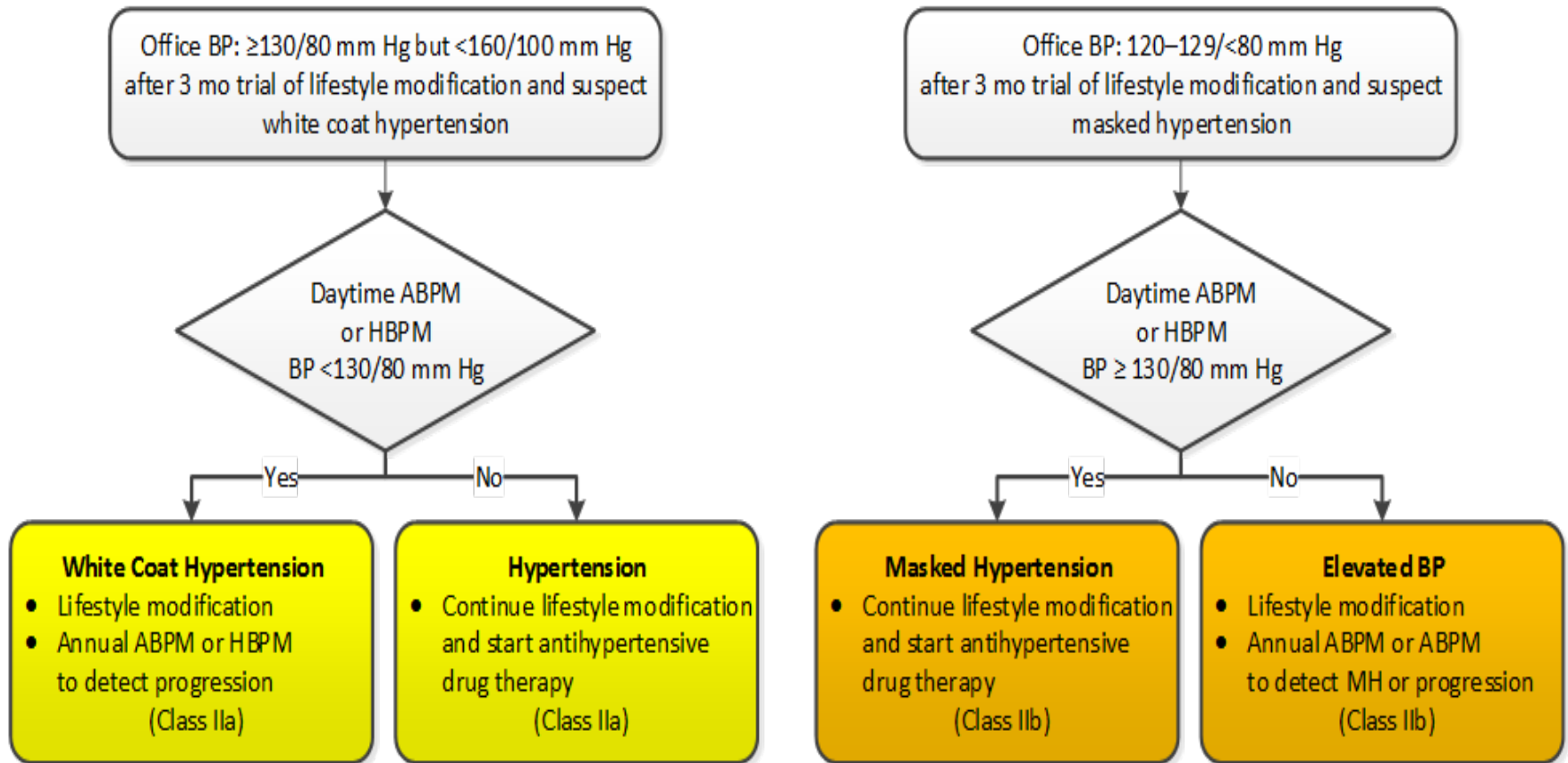


Conclusions

- Ambulatory blood-pressure measurements were a stronger predictor of all-cause and cardiovascular mortality than clinic blood-pressure measurements.
- White-coat hypertension was not benign, and masked hypertension was associated with a greater risk of death than sustained hypertension.



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.

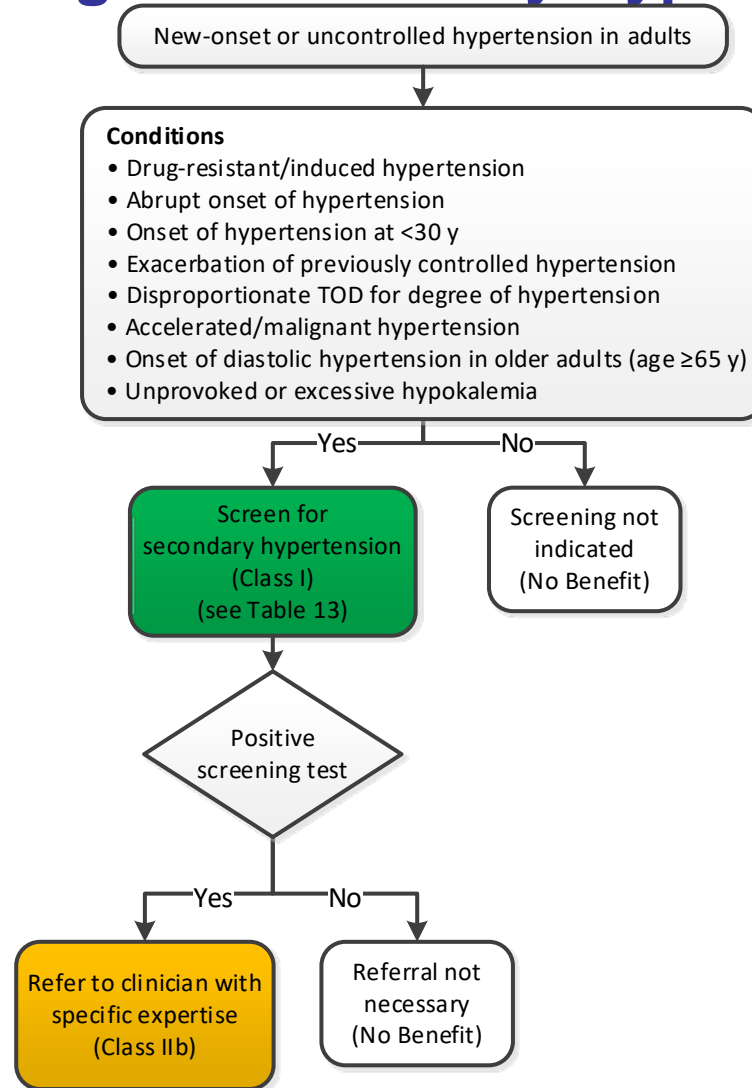
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Causes of Hypertension

Secondary Forms of Hypertension

COR	LOE	Recommendations for Secondary Forms of Hypertension
I	C-EO	Screening for specific form(s) of secondary hypertension is recommended when the clinical indications and physical examination findings are present or in adults with resistant hypertension.
IIb	C-EO	If an adult with sustained hypertension screens positive for a form of secondary hypertension, referral to a physician with expertise in that form of hypertension may be reasonable for diagnostic confirmation and treatment.

Screening for Secondary Hypertension



Colors correspond to Class of Recommendation in Table 1 .

TOD indicates target organ damage (e.g., cerebrovascular disease, hypertensive retinopathy, left ventricular hypertrophy, left ventricular dysfunction, heart failure, coronary artery disease, chronic kidney disease, albuminuria, peripheral artery disease).

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

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Nonpharmacological Interventions

Nonpharmacological Interventions

COR	LOE	Recommendations for Nonpharmacological Interventions
I	A	Weight loss is recommended to reduce BP in adults with elevated BP or hypertension who are overweight or obese.
I	A	A heart-healthy diet, such as the DASH (Dietary Approaches to Stop Hypertension) diet, that facilitates achieving a desirable weight is recommended for adults with elevated BP or hypertension.
I	A	Sodium reduction is recommended for adults with elevated BP or hypertension.
I	A	Potassium supplementation, preferably in dietary modification, is recommended for adults with elevated BP or hypertension, unless contraindicated by the presence of CKD or use of drugs that reduce potassium excretion.

Nonpharmacological Interventions (cont.)

COR	LOE	Recommendations for Nonpharmacological Interventions
I	A	Increased physical activity with a structured exercise program is recommended for adults with elevated BP or hypertension.
I	A	Adult men and women with elevated BP or hypertension who currently consume alcohol should be advised to drink no more than 2 and 1 standard drinks* per day, respectively.

*In the United States, 1 “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).

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	In individuals who drink alcohol, reduce alcohol [†] to: <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).

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Patient Evaluation

Basic and Optional Laboratory Tests for Primary Hypertension

Basic testing	Fasting blood glucose*
	Complete blood count
	Lipid profile
	Serum creatinine with eGFR*
	Serum sodium, potassium, calcium*
	Thyroid-stimulating hormone
	Urinalysis
	Electrocardiogram
Optional testing	Echocardiogram
	Uric acid
	Urinary albumin to creatinine ratio

*May be included in a comprehensive metabolic panel.
eGFR indicates estimated glomerular filtration rate.

Follow-up For HTN

8.3.1. Follow-Up After Initiating Antihypertensive Drug Therapy

Recommendation for Follow-Up After Initiating Antihypertensive Drug Therapy		
References that support the recommendation are summarized in Online Data Supplement 28.		
COR	LOE	Recommendation
I	B-R	1. Adults initiating a new or adjusted drug regimen for hypertension should have a follow-up evaluation of adherence and response to treatment at <u>monthly intervals until control is achieved (1-3).</u>

8.1.3. Follow-Up After Initial BP Evaluation

Recommendations for Follow-Up After Initial BP Elevation		
References that support recommendations are summarized in Online Data Supplement 24.		
COR	LOE	Recommendations
I	B-R	1. Adults with an elevated BP or stage 1 hypertension who have an estimated <u>10-year ASCVD risk less than 10% should be managed with nonpharmacological therapy and have a repeat BP evaluation within 3 to 6 months (1, 2).</u>
I	B-R	2. Adults with stage 1 hypertension who have an estimated 10-year ASCVD risk of 10% or higher should be managed initially with a combination of nonpharmacological and antihypertensive drug therapy and have a repeat BP evaluation in 1 month (1, 2).
I	B-R	3. Adults with stage 2 hypertension should be evaluated by or referred to a primary care provider within 1 month of the initial diagnosis, have a combination of nonpharmacological and antihypertensive drug therapy (with 2 agents of different classes) initiated, and have a repeat BP evaluation in 1 month (1, 2).
I	B-R	4. For adults with a very high average BP (e.g., SBP ≥ 180 mm Hg or DBP ≥ 110 mm Hg), evaluation followed by prompt antihypertensive drug treatment is recommended (1, 2).
IIa	C-EO	5. For adults with a normal BP, repeat evaluation every year is reasonable.

Choice of Initial Medication

COR	LOE	Recommendation for Choice of Initial Medication
I	A ^{SR}	For initiation of antihypertensive drug therapy, first-line agents include thiazide diuretics, CCBs, and ACE inhibitors or ARBs.

SR indicates systematic review.

No Beta Blockers as 1st Line

Choice of Initial Monotherapy Versus Initial Combination Drug Therapy

COR	LOE	Recommendations for Choice of Initial Monotherapy Versus Initial Combination Drug Therapy*
I	C-EO	Initiation of antihypertensive drug therapy <u>with 2 first-line agents of different classes, either as separate agents or in a fixed-dose combination, is recommended</u> in adults with stage 2 hypertension and an average BP more than 20/10 mm Hg above their BP target.
Ila	C-EO	Initiation of antihypertensive drug therapy with a single antihypertensive drug is reasonable in adults with stage 1 hypertension and BP goal <130/80 mm Hg with dosage titration and sequential addition of other agents to achieve the BP target.

Follow-Up After Initiating Antihypertensive Drug Therapy

COR	LOE	Recommendation for Follow-Up After Initiating Antihypertensive Drug Therapy
I	B-R	Adults initiating a new or adjusted drug regimen for hypertension should have a follow-up evaluation of adherence and response to treatment <u>at monthly intervals</u> until control is achieved.

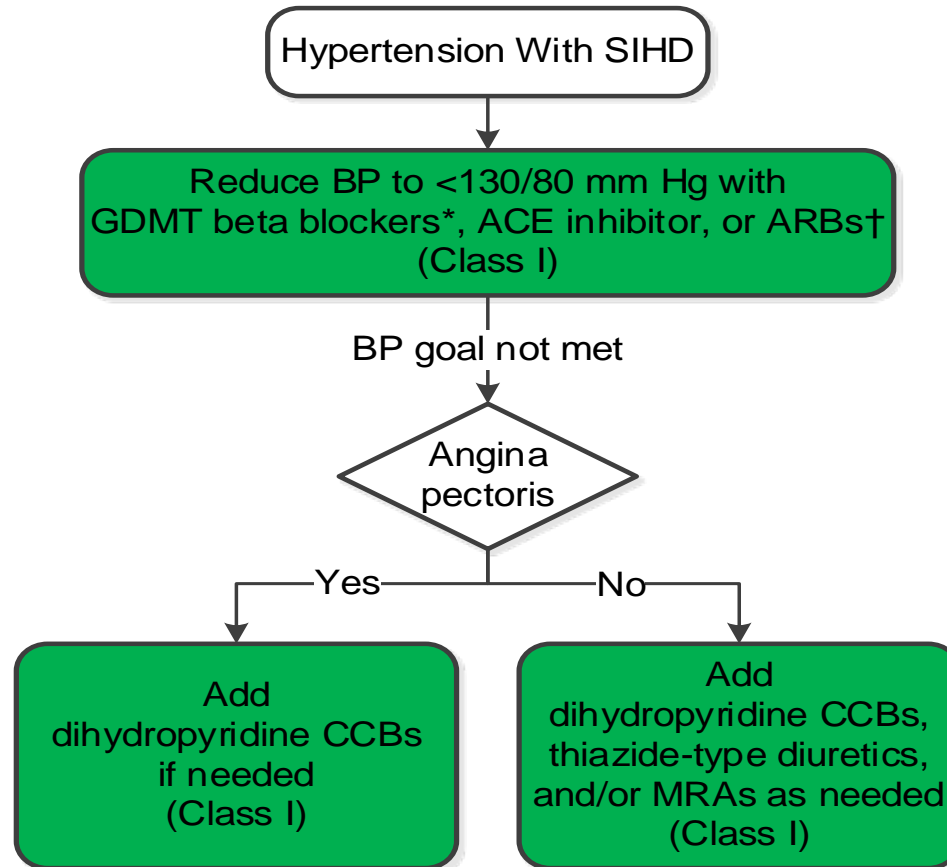
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Hypertension in Patients With Comorbidities

Stable Ischemic Heart Disease

COR	LOE	Recommendations for Treatment of Hypertension in Patients With Stable Ischemic Heart Disease (SIHD)
I	SBP: B-R	In adults with SIHD and hypertension, a BP target of less than <u>130/80 mm Hg</u> is recommended.
	DBP: C-EO	
I	SBP: B-R	Adults with SIHD and hypertension (BP \geq 130/80 mm Hg) should be treated with medications (e.g., <u>GDMT beta blockers</u> , ACE inhibitors, or ARBs) for compelling indications (e.g., previous MI, stable angina) as first-line therapy, with the addition of other drugs (e.g., dihydropyridine CCBs, thiazide diuretics, and/or <u>mineralocorticoid receptor antagonists</u>) as needed to further control hypertension.
	DBP: C-EO	

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 <u>less than 130/80 mm Hg</u> .
	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	<u>Nondihydropyridine</u> CCBs are not recommended in the treatment of hypertension in adults with HFrEF.

Heart Failure With Preserved Ejection Fraction

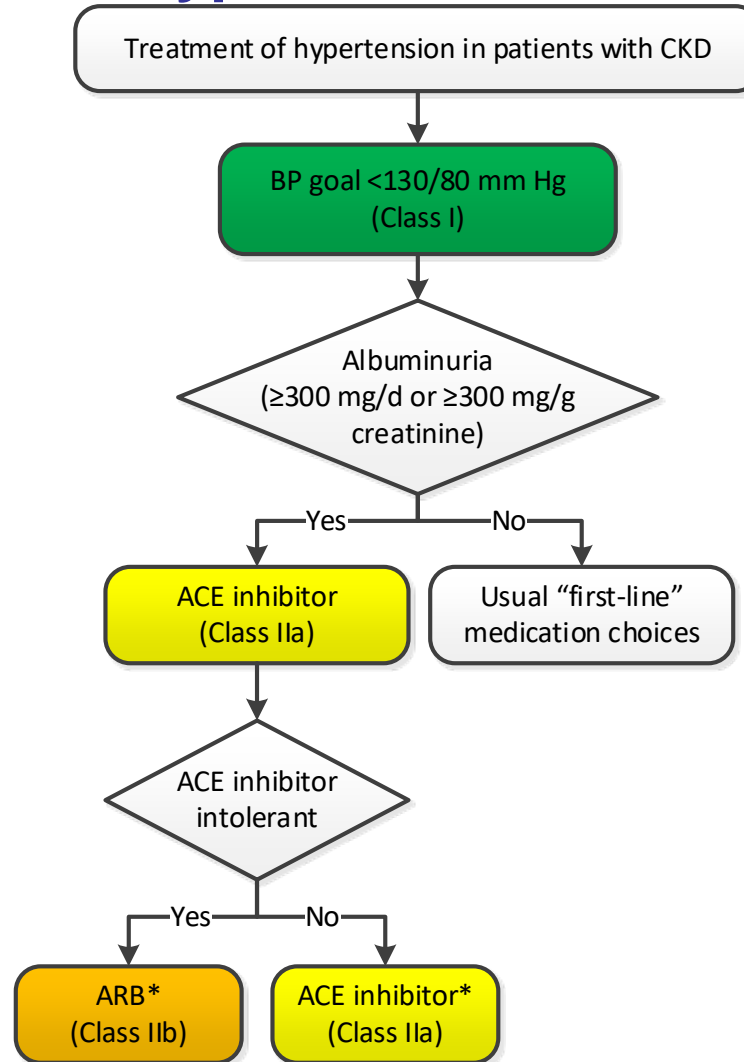
COR	LOE	Recommendations for Treatment of Hypertension in Patients With HF _p EF
I	C-EO	In adults with HF _p EF who present with symptoms of volume overload, <u>diuretics should be prescribed to control hypertension.</u>
I	C-LD	Adults with HF _p EF and persistent hypertension after management of volume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

Chronic Kidney Disease

COR	LOE	Recommendations for Treatment of Hypertension in Patients With CKD
I	SBP: B-R^{SR}	Adults with hypertension and CKD should be treated to a BP goal of <u>less than 130/80 mm Hg</u> .
	DBP: C-EO	
IIa	B-R	In adults with hypertension and CKD (stage 3 or higher or stage 1 or 2 with albuminuria [≥ 300 mg/d, or ≥ 300 mg/g albumin-to-creatinine ratio or the equivalent in the first morning void]), treatment with an ACE inhibitor is reasonable to slow kidney disease progression.
IIb	C-EO	In adults with hypertension and CKD (stage 3 or higher or stage 1 or 2 with albuminuria [≥ 300 mg/d, or ≥ 300 mg/g albumin-to-creatinine ratio in the first morning void]), treatment with an ARB may be reasonable if an ACE inhibitor is not tolerated.

SR indicates systematic review.

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.

Peripheral Arterial Disease

COR	LOE	Recommendation for Treatment of Hypertension in Patients With PAD
I	B-NR	Adults with hypertension and PAD should be treated similarly to patients with hypertension without PAD.

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.

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 (<u>≥65 years of age</u>) 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.

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The Plan of Care for Hypertension

The Plan of Care for Hypertension

COR	LOE	Recommendations for Financial Incentives
I	C-EO	Every adult with hypertension should have a clear, detailed, and current evidence-based plan of care that ensures the achievement of treatment and self-management goals, encourages effective management of comorbid conditions, prompts timely follow-up with the healthcare team, and adheres to CVD GDMT.

Clinician's Sequential Flow Chart for the Management of Hypertension

Clinician's Sequential Flow Chart for the Management of Hypertension
Measure office BP accurately
Detect white coat hypertension or masked hypertension by using ABPM and HBPM
Evaluate for secondary hypertension
Identify target organ damage
Introduce lifestyle interventions
Identify and discuss treatment goals
Use ASCVD risk estimation to guide BP threshold for drug therapy
Align treatment options with comorbidities
Account for age, race, ethnicity, sex, and special circumstances in antihypertensive treatment
Initiate antihypertensive pharmacological therapy
Insure appropriate follow-up
Use team-based care
Connect patient to clinician via telehealth
Detect and reverse nonadherence
Detect white coat effect or masked uncontrolled hypertension
Use health information technology for remote monitoring and self-monitoring of BP

ASCVD indicates atherosclerotic cardiovascular disease; BP, blood pressure; CVD, cardiovascular disease; and SBP, systolic blood pressure.

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.

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Summary of BP Thresholds and Goals for Pharmacological Therapy Plan of Care for Hypertension

BP Thresholds for and Goals of Pharmacological Therapy in Patients With Hypertension According to Clinical Conditions

Clinical Condition(s)	BP Threshold, mm Hg	BP Goal, mm Hg
General		
Clinical CVD or 10-year ASCVD risk $\geq 10\%$	$\geq 130/80$	$< 130/80$
No clinical CVD and 10-year ASCVD risk $< 10\%$	$\geq 140/90$	$< 130/80$
Older persons (≥ 65 years of age; noninstitutionalized, ambulatory, community-living adults)	≥ 130 (SBP)	< 130 (SBP)
Specific comorbidities		
Diabetes mellitus	$\geq 130/80$	$< 130/80$
Chronic kidney disease	$\geq 130/80$	$< 130/80$
Chronic kidney disease after renal transplantation	$\geq 130/80$	$< 130/80$
Heart failure	$\geq 130/80$	$< 130/80$
Stable ischemic heart disease	$\geq 130/80$	$< 130/80$
Secondary stroke prevention	$\geq 140/90$	$< 130/80$
Secondary stroke prevention (lacunar)	$\geq 130/80$	$< 130/80$
Peripheral arterial disease	$\geq 130/80$	$< 130/80$

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