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: Executive Summary

A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines

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3.2. Lifetime Risk of Hypertension

Observational studies have documented a relatively high incidence of hypertension over periods of 5 to 10 years of follow-up.[S3.2-1,S3.2-2] Thus, there is a much higher long-term population burden of hypertension as BP progressively increases with age. Several studies have estimated the long-term cumulative incidence of developing hypertension.[S3.2-3,S3.2-4] In an analysis of 1132 white male medical students (mean age: approximately 23 years at baseline) in the Johns Hopkins Precursors study, 0.3%, 6.5%, and 37% developed hypertension at age 25, 45, and 65 years, respectively.[S3.2-5] In MESA (Multi-Ethnic Study of Atherosclerosis), the percentage of the population developing hypertension over their lifetimes was higher for African Americans and Hispanics than for whites and Asians.[S3.2-3] For adults 45 years of age without hypertension, the 40-year risk of developing hypertension was 93% for African-American, 92% for Hispanic, 86% for white, and 84% for Chinese adults.[S3.2-3] In the Framingham Heart Study, approximately 90% of adults free of hypertension at age 55 or 65 years developed hypertension during their lifetimes.[S3.2-4] All of these estimates were based on use of the 140/90–mm Hg cutpoint for recognition of hypertension and would have been higher had the 130/80–mm Hg cutpoint been used.

3.3. Prevalence of High BP

Table 7. Prevalence of Hypertension Based on 2 SBP/DBP Thresholds*†

	SBP/DBP ≥130/80 mm Hg or Self-Reported Antihypertensive Medication†		SBP/DBP ≥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 (≥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 US adult population.

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

4. Measurement of BP

4.1. Accurate Measurement of BP in the Office

Recommendation for Accurate Measurement of BP in the Office		
COR	**LOE**	**Recommendation**
I	C-EO	1. For diagnosis and management of high BP, proper methods are recommended for accurate measurement and documentation of BP (Table 8).

Table 8. Checklist for Accurate Measurement of BP[S4.1-1,S4.1-2]

Key Steps for Proper BP Measurements	Specific Instructions
Step 1: Properly prepare the patient	1. Have the patient relax, sitting in a chair (feet on floor, back supported) for >5 min. 2. The patient should avoid caffeine, exercise, and smoking for at least 30 min before measurement. 3. Ensure patient has emptied his/her bladder. 4. Neither the patient nor the observer should talk during the rest period or during the measurement. 5. Remove all clothing covering the location of cuff placement. 6. Measurements made while the patient is sitting or lying on an examining table do not fulfill these criteria.
Step 2: Use proper technique for BP measurements	1. Use a BP measurement device that has been validated, and ensure that the device is calibrated periodically.* 2. Support the patient's arm (eg, resting on a desk). 3. Position the middle of the cuff on the patient's upper arm at the level of the right atrium (the midpoint of the sternum). 4. Use the correct cuff size, such that the bladder encircles 80% of the arm, and note if a larger- or smaller-than-normal cuff size is used (Table 9). 5. Either the stethoscope diaphragm or bell may be used for auscultatory readings.[S4.1-3,S4.1-4]
Step 3: Take the proper measurements needed for diagnosis and treatment of elevated BP/hypertension	1. At the first visit, record BP in both arms. Use the arm that gives the higher reading for subsequent readings. 2. Separate repeated measurements by 1–2 min. 3. For auscultatory determinations, use a palpated estimate of radial pulse obliteration pressure to estimate SBP. Inflate the cuff 20–30 mm Hg above this level for an auscultatory determination of the BP level. 4. For auscultatory readings, deflate the cuff pressure 2 mm Hg per second, and listen for Korotkoff sounds.

(*Continued*)

Table 8. Continued

Key Steps for Proper BP Measurements	Specific Instructions
Step 4: Properly document accurate BP readings	1. Record SBP and DBP. If using the auscultatory technique, record SBP and DBP as onset of the first Korotkoff sound and disappearance of all Korotkoff sounds, respectively, using the nearest even number. 2. Note the time of most recent BP medication taken before measurements.
Step 5: Average the readings	Use an average of ≥2 readings obtained on ≥2 occasions to estimate the individual's level of BP.
Step 6: Provide BP readings to patient	Provide patients the SBP/DBP readings both verbally and in writing.

*See Section 4.2 for additional guidance.

Adapted with permission from Mancia et al[S4.1-1] (Oxford University Press), Pickering et al[S4.1-5] (American Heart Association, Inc.), and Weir et al[S4.1-2] (American College of Physicians, Inc.).

BP indicates blood pressure; DBP, diastolic blood pressure; and SBP, systolic blood pressure.

4.2. Out-of-Office and Self-Monitoring of BP

Recommendation for Out-of-Office and Self-Monitoring of BP

References that support the recommendation are summarized in Online Data Supplement 3 and Systematic Review Report.

COR	LOE	Recommendation
I	A[SR]	1. Out-of-office BP measurements are recommended to confirm the diagnosis of hypertension (Table 11) and for titration of BP-lowering medication, in conjunction with telehealth counseling or clinical interventions.[S4.2-1–S4.2-4]

SR indicates systematic review.

Table 9. Selection Criteria for BP Cuff Size for Measurement of BP in Adults

Arm Circumference	Usual Cuff Size
22–26 cm	Small adult
27–34 cm	Adult
35–44 cm	Large adult
45–52 cm	Adult thigh

Adapted with permission from Pickering et al[S4.1-5] (American Heart Association, Inc.).

BP indicates blood pressure.

Table 10. Procedures for Use of HBPM[S4.2-5–S4.2-7]

Patient training should occur under medical supervision, including:
Information about hypertension
Selection of equipment
Acknowledgment that individual BP readings may vary substantially
Interpretation of results

(*Continued*)

Table 10. Continued

Devices:
Verify use of automated validated devices. Use of auscultatory devices (mercury, aneroid, or other) is not generally useful for HBPM because patients rarely master the technique required for measurement of BP with auscultatory devices.
Monitors with provision for storage of readings in memory are preferred.
Verify use of appropriate cuff size to fit the arm (Table 9).
Verify that left/right inter-arm differences are insignificant. If differences are significant, instruct patient to measure BPs in the arm with higher readings.
Instructions on HBPM procedures:
Remain still:
Avoid smoking, caffeinated beverages, or exercise within 30 min before BP measurements.
Ensure ≥5 min of quiet rest before BP measurements.
Sit correctly:
Sit with back straight and supported (on a straight-backed dining chair, for example, rather than a sofa).
Sit with feet flat on the floor and legs uncrossed.
Keep arm supported on a flat surface (such as a table), with the upper arm at heart level.
Bottom of the cuff should be placed directly above the antecubital fossa (bend of the elbow).
Take multiple readings:
Take at least 2 readings 1 min apart in morning before taking medications and in evening before supper. Optimally, measure and record BP daily. Ideally, obtain weekly BP readings beginning 2 weeks after a change in the treatment regimen and during the week before a clinic visit.
Record all readings accurately:
Monitors with built-in memory should be brought to all clinic appointments.
BP should be based on an average of readings on ≥2 occasions for clinical decision making.
The information above may be reinforced with videos available online.

See Table 11 for HBPM targets.

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

4.3. Masked and White Coat Hypertension

Recommendations for Masked and White Coat Hypertension

References that support recommendations are summarized in Online Data Supplements 4, 5, and 6.

COR	LOE	Recommendations
IIa	B-NR	1. In adults with an untreated SBP greater than 130 mm Hg but less than 160 mm Hg or DBP greater than 80 mm Hg but less than 100 mm Hg, it is reasonable to screen for the presence of white coat hypertension by using either daytime ABPM or HBPM before diagnosis of hypertension.[S4.3-1–S4.3-8]
IIa	C-LD	2. In adults with white coat hypertension, periodic monitoring with either ABPM or HBPM is reasonable to detect transition to sustained hypertension.[S4.3-2,S4.3-5,S4.3-7]

Table 14. Frequently Used Medications and Other Substances That May Cause Elevated BP*

Agent	Possible Management Strategy
Alcohol	Limit alcohol to ≤1 drink daily for women and ≤2 drinks for men[S5.1.1-1]
Amphetamines (eg, amphetamine, methylphenidate dexmethylphenidate, dextroamphetamine)	Discontinue or decrease dose[S5.1.1-2] Consider behavioral therapies for ADHD[S5.1.1-3]
Antidepressants (eg, MAOIs, SNRIs, TCAs)	Consider alternative agents (eg, SSRIs) depending on indication Avoid tyramine-containing foods with MAOIs
Atypical antipsychotics (eg, clozapine, olanzapine)	Discontinue or limit use when possible Consider behavior therapy where appropriate Recommend lifestyle modification (see Section 6.2) Consider alternative agents associated with lower risk of weight gain, diabetes mellitus, and dyslipidemia (eg, aripiprazole, ziprasidone)[S5.1.1-4,S5.1.1-5]
Caffeine	Generally limit caffeine intake to <300 mg/d Avoid use in patients with uncontrolled hypertension Coffee use in patients with hypertension is associated with acute increases in BP; long-term use is not associated with increased BP or CVD[S5.1.1-6]
Decongestants (eg, phenylephrine, pseudoephedrine)	Use for shortest duration possible, and avoid in severe or uncontrolled hypertension Consider alternative therapies (eg, nasal saline, intranasal corticosteroids, antihistamines) as appropriate
Herbal supplements (eg, Ma Huang [ephedra], St. John's wort [with MAO inhibitors, yohimbine])	Avoid use
Immunosuppressants (eg, cyclosporine)	Consider converting to tacrolimus, which may be associated with fewer effects on BP[S5.1.1-7–S5.1.1-9]
Oral contraceptives	Use low-dose (eg, 20–30 mcg ethinyl estradiol) agents[S5.1.1-10] or a progestin-only form of contraception, or consider alternative forms of birth control where appropriate (eg, barrier, abstinence, IUD) Avoid use in women with uncontrolled hypertension[S5.1.1-10]
NSAIDs	Avoid systemic NSAIDs when possible Consider alternative analgesics (eg, acetaminophen, tramadol, topical NSAIDs), depending on indication and risk
Recreational drugs (eg, "bath salts" [MDPV], cocaine, methamphetamine, etc.)	Discontinue or avoid use
Systemic corticosteroids (eg, dexamethasone, fludrocortisone, methylprednisolone, prednisone, prednisolone)	Avoid or limit use when possible Consider alternative modes of administration (eg, inhaled, topical) when feasible
Angiogenesis inhibitor (eg, bevacizumab) and tyrosine kinase inhibitors (eg, sunitinib, sorafenib)	Initiate or intensify antihypertensive therapy

*List is not all inclusive.

ADHD indicates attention-deficit/hyperactivity disorder; BP, blood pressure; CVD, cardiovascular disease; IUD, intra-uterine device; MAOI, monoamine-oxidase inhibitors; MDPV, methylenedioxypyrovalerone; NSAIDs, nonsteroidal anti-inflammatory drugs; SNRI, serotonin norepinephrine reuptake inhibitor; SSRI, selective serotonin reuptake inhibitor; and TCA, tricyclic antidepressant.

5.1.4. Obstructive Sleep Apnea

Recommendation for Obstructive Sleep Apnea

References that support the recommendation are summarized in Online Data Supplement 8.

COR	LOE	Recommendation
IIb	B-R	1. In adults with hypertension and obstructive sleep apnea, the effectiveness of continuous positive airway pressure (CPAP) to reduce BP is not well established.[S5.1.4-1–S5.1.4-5]

6. Nonpharmacological Interventions

Recommendations for Nonpharmacological Interventions

References that support recommendations are summarized in Online Data Supplements 9-21.

COR	LOE	Recommendations
I	A	1. Weight loss is recommended to reduce BP in adults with elevated BP or hypertension who are overweight or obese.[S6-1–S6-4]
I	A	2. 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.[S6-5–S6-7]
I	A	3. Sodium reduction is recommended for adults with elevated BP or hypertension.[S6-8–S6-12]

Recommendations for Nonpharmacological Interventions (Continued)		
COR	**LOE**	**Recommendations**
I	A	4. 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.[S6-13–S6-17]
I	A	5. Increased physical activity with a structured exercise program is recommended for adults with elevated BP or hypertension.[S6-3,S6-4,S6-12,S6-18–S6-22]
I	A	6. 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.[S6-23–S6-28]

*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).[S6-29]

Table 15. Best Proven Nonpharmacological Interventions for Prevention and Treatment of Hypertension*

	Nonpharmacological Intervention	Dose	Approximate Impact on SBP		
			Hypertension	Normotension	Reference
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	S6-1
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	S6-6,S6-7
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	S6-9,S6-10
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	S6-13
Physical activity	Aerobic	90–150 min/wk 65%–75% heart rate reserve	–5/8 mm Hg	–2/4 mm Hg	S6-18,S6-22
	Dynamic resistance	90–150 min/wk 50%–80% 1 rep maximum 6 exercises, 3 sets/exercise, 10 repetitions/set	–4 mm Hg	–2 mm Hg	S6-18
	Isometric resistance	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	S6-19,S6-30
Moderation in alcohol intake	Alcohol consumption	In individuals who drink alcohol, reduce alcohol† to: Men: ≤2 drinks daily Women: ≤1 drink daily	–4 mm Hg	–3 mm Hg	S6-22–S6-24

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. Accessed September 15, 2017.[S6-31]

Top 10 Dash Diet Tips. Available at: http://dashdiet.org/dash_diet_tips.asp. Accessed September 15, 2017.[S6-32]

*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).[S6-29]

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

8.1.4. General Principles of Drug Therapy

Recommendation for General Principle of Drug Therapy References that support recommendations are summarized in Online Data Supplement 25.		
COR	**LOE**	**Recommendation**
III: Harm	A	1. Simultaneous use of an ACE inhibitor, ARB, and/or renin inhibitor is potentially harmful and is not recommended to treat adults with hypertension.[S8.1.4-1–S8.1.4-3]

Table 18. Oral Antihypertensive Drugs

Class	Drug	Usual Dose, Range (mg/d)*	Daily Frequency	Comments
Primary agents				
Thiazide or thiazide-type diuretics	Chlorthalidone	12.5–25	1	Chlorthalidone is preferred on the basis of prolonged half-life and proven trial reduction of CVD. Monitor for hyponatremia and hypokalemia, uric acid and calcium levels. Use with caution in patients with history of acute gout unless patient is on uric acid–lowering therapy.
	Hydrochlorothiazide	25–50	1	
	Indapamide	1.25–2.5	1	
	Metolazone	2.5–5	1	
ACE inhibitors	Benazepril	10–40	1 or 2	Do not use in combination with ARBs or direct renin inhibitor. There is an increased risk of hyperkalemia, especially in patients with CKD or in those on K^+ supplements or K^+-sparing drugs. There is a risk of acute renal failure in patients with severe bilateral renal artery stenosis. Do not use if patient has history of angioedema with ACE inhibitors. Avoid in pregnancy.
	Captopril	12.5–150	2 or 3	
	Enalapril	5–40	1 or 2	
	Fosinopril	10–40	1	
	Lisinopril	10–40	1	
	Moexipril	7.5–30	1 or 2	
	Perindopril	4–16	1	
	Quinapril	10–80	1 or 2	
	Ramipril	2.5–20	1 or 2	
	Trandolapril	1–4	1	
ARBs	Azilsartan	40–80	1	Do not use in combination with ACE inhibitors or direct renin inhibitor. There is an increased risk of hyperkalemia in CKD or in those on K^+ supplements or K^+-sparing drugs. There is a risk of acute renal failure in patients with severe bilateral renal artery stenosis. Do not use if patient has history of angioedema with ARBs. Patients with a history of angioedema with an ACE inhibitor can receive an ARB beginning 6 weeks after ACE inhibitor is discontinued. Avoid in pregnancy.
	Candesartan	8–32	1	
	Eprosartan	600–800	1 or 2	
	Irbesartan	150–300	1	
	Losartan	50–100	1 or 2	
	Olmesartan	20–40	1	
	Telmisartan	20–80	1	
	Valsartan	80–320	1	
CCB—dihydropyridines	Amlodipine	2.5–10	1	Avoid use in patients with HF*r*EF; amlodipine or felodipine may be used if required. They are associated with dose-related pedal edema, which is more common in women than men.
	Felodipine	2.5–10	1	
	Isradipine	5–10	2	
	Nicardipine SR	60–120	2	
	Nifedipine LA	30–90	1	
	Nisoldipine	17–34	1	
CCB—nondihydropyridines	Diltiazem ER	120–360	1	Avoid routine use with beta blockers because of increased risk of bradycardia and heart block. Do not use in patients with HF*r*EF. There are drug interactions with diltiazem and verapamil (*CYP3A4* major substrate and moderate inhibitor).
	Verapamil IR	120-360	3	
	Verapamil SR	120–360	1 or 2	
	Verapamil-delayed onset ER	100–300	1 (in the evening)	

(*Continued*)

Table 18. Continued

Class	Drug	Usual Dose, Range (mg/d)*	Daily Frequency	Comments
Secondary agents				
Diuretics—loop	Bumetanide	0.5–2	2	These are preferred diuretics in patients with symptomatic HF. They are preferred over thiazides in patients with moderate-to-severe CKD (eg, GFR <30 mL/min).
	Furosemide	20–80	2	
	Torsemide	5–10	1	
Diuretics—potassium sparing	Amiloride	5–10	1 or 2	These are monotherapy agents and minimally effective antihypertensive agents. Combination therapy of potassium-sparing diuretic with a thiazide can be considered in patients with hypokalemia on thiazide monotherapy. Avoid in patients with significant CKD (eg, GFR <45 mL/min).
	Triamterene	50–100	1 or 2	
Diuretics—aldosterone antagonists	Eplerenone	50–100	1 or 2	These are preferred agents in primary aldosteronism and resistant hypertension. Spironolactone is associated with greater risk of gynecomastia and impotence as compared with eplerenone. This is common add-on therapy in resistant hypertension. Avoid use with K^+ supplements, other K^+-sparing diuretics, or significant renal dysfunction. Eplerenone often requires twice-daily dosing for adequate BP lowering.
	Spironolactone	25–100	1	
Beta blockers—cardioselective	Atenolol	25–100	2	Beta blockers are not recommended as first-line agents unless the patient has IHD or HF. These are preferred in patients with bronchospastic airway disease requiring a beta blocker. Bisoprolol and metoprolol succinate are preferred in patients with HFrEF. Avoid abrupt cessation.
	Betaxolol	5–20	1	
	Bisoprolol	2.5–10	1	
	Metoprolol tartrate	100–200	2	
	Metoprolol succinate	50–200	1	
Beta blockers—cardioselective and vasodilatory	Nebivolol	5–40	1	Nebivolol induces nitric oxide–induced vasodilation. Avoid abrupt cessation.
Beta blockers—noncardioselective	Nadolol	40–120	1	Avoid in patients with reactive airways disease. Avoid abrupt cessation.
	Propranolol IR	80–160	2	
	Propranolol LA	80–160	1	
Beta blockers—intrinsic sympathomimetic activity	Acebutolol	200–800	2	Generally avoid, especially in patients with IHD or HF. Avoid abrupt cessation.
	Penbutolol	10–40	1	
	Pindolol	10–60	2	
Beta blockers—combined alpha- and beta-receptor	Carvedilol	12.5–50	2	Carvedilol is preferred in patients with HFrEF. Avoid abrupt cessation.
	Carvedilol phosphate	20–80	1	
	Labetalol	200–800	2	
Direct renin inhibitor	Aliskiren	150–300	1	Do not use in combination with ACE inhibitors or ARBs. Aliskiren is very long acting. There is an increased risk of hyperkalemia in CKD or in those on K^+ supplements or K^+-sparing drugs. Aliskiren may cause acute renal failure in patients with severe bilateral renal artery stenosis. Avoid in pregnancy.
Alpha-1 blockers	Doxazosin	1–16	1	These are associated with orthostatic hypotension, especially in older adults. They may be considered as second-line agent in patients with concomitant BPH.
	Prazosin	2–20	2 or 3	
	Terazosin	1–20	1 or 2	
Central $alpha_2$-agonist and other centrally acting drugs	Clonidine oral	0.1–0.8	2	These are generally reserved as last-line because of significant CNS adverse effects, especially in older adults. Avoid abrupt discontinuation of clonidine, which may induce hypertensive crisis; clonidine must be tapered to avoid rebound hypertension.
	Clonidine patch	0.1–0.3	1 weekly	
	Methyldopa	250–1000	2	
	Guanfacine	0.5–2	1	

(*Continued*)

Table 18. Continued

Class	Drug	Usual Dose, Range (mg/d)*	Daily Frequency	Comments
Secondary agents (Continued)				
Direct vasodilators	Hydralazine	100-200	2 or 3	These are associated with sodium and water retention and reflex tachycardia; use with a diuretic and beta blocker. Hydralazine is associated with drug-induced lupus-like syndrome at higher doses. Minoxidil is associated with hirsutism and requires a loop diuretic. Minoxidil can induce pericardial effusion.
	Minoxidil	5–100	1-3	

*Dosages may vary from those listed in the FDA-approved labeling (available at https://dailymed.nlm.nih.gov/dailymed/). From Chobanian et al JNC 7.[S8.1.4-4]

ACE indicates angiotensin-converting enzyme; ARB, angiotensin receptor blocker; BP, blood pressure; BPH, benign prostatic hyperplasia; CCB, calcium channel blocker; CKD, chronic kidney disease; CNS, central nervous system; CVD, cardiovascular disease; ER, extended release; GFR, glomerular filtration rate; HF, heart failure; HFrEF, heart failure with reduced ejection fraction; IHD, ischemic heart disease; IR, immediate release; LA, long-acting; and SR, sustained release.

8.1.5. BP Goal for Patients With Hypertension

Recommendations for BP Goal for Patients With Hypertension

References that support recommendations are summarized in Online Data Supplement 26 and Systematic Review Report

COR	LOE	Recommendations
I	SBP: B-R[SR] DBP: C-EO	1. For adults with confirmed hypertension and known CVD or 10-year ASCVD event risk of 10% or higher (see Section 8.1.2), a BP target of less than 130/80 mm Hg is recommended.[S8.1.5-1–S8.1.5-5]
IIb	SBP: B-NR DBP: C-EO	2. For adults with confirmed hypertension, without additional markers of increased CVD risk, a BP target of less than 130/80 mm Hg may be reasonable.[S8.1.5-6–S8.1.5-9]

SR indicates systematic review.

8.1.6. Choice of Initial Medication

Recommendation for Choice of Initial Medication

References that support the recommendation are summarized in Online Data Supplement 27 and Systematic Review Report

COR	LOE	Recommendation
I	A[SR]	1. For initiation of antihypertensive drug therapy, first-line agents include thiazide diuretics, CCBs, and ACE inhibitors or ARBs.[S8.1.6-1,S8.1.6-2]

SR indicates systematic review.

8.1.6.1. Choice of Initial Monotherapy Versus Initial Combination Drug Therapy

Recommendations for Choice of Initial Monotherapy Versus Initial Combination Drug Therapy*

COR	LOE	Recommendations
I	C-EO	1. Initiation of antihypertensive drug therapy with 2 first-line agents of different classes, either as separate agents or in a fixed-dose combination, is recommended in adults with stage 2 hypertension and an average BP more than 20/10 mm Hg above their BP target.

Recommendations for Choice of Initial Monotherapy Versus Initial Combination Drug Therapy*

COR	LOE	Recommendations
IIa	C-EO	2. 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.

*Fixed-dose combination antihypertensive medications are listed in Online Data Supplement D.

8.2. Follow-Up of BP During Antihypertensive Drug Therapy

Appropriate follow-up and monitoring enable assessment of adherence (see Section 12.1) and response to therapy, help identify adverse responses to therapy and target organ damage, and allow assessment of progress toward treatment goals. High-quality RCTs have successfully and safely developed strategies for follow-up, monitoring, and reassessment from which recommendations can be made (Figure 4).[S8.2-1,S8.2-2] A systematic approach to out-of-office BP assessment is an essential part of follow-up and monitoring of BP, to assess response to therapy; check for evidence of white coat hypertension, white coat effect, masked hypertension, or masked uncontrolled hypertension; and help achieve BP targets (see Sections 4 and 12).

8.2.1. 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 monthly intervals until control is achieved.[S8.2.1-1–S8.2.1-3]