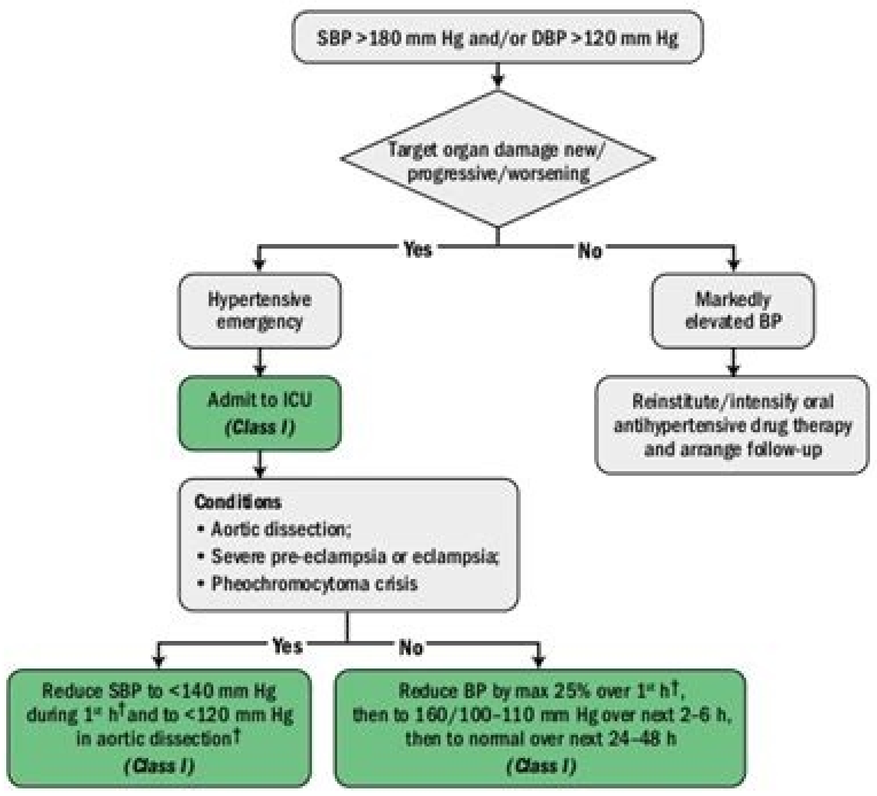
**Aha hypertension treatment guidelines pdf**

## Diagnosis and Management of a Hypertensive Crisis




‡Use drug(s) specified in Table 19.
†If other comorbidities are present, select a drug specified in Table 20.
Figure 11





**Table 1. Comparison of Current Recommendations With JNC 7 Guidelines**

| Topic | JNC 7 | 2014 Hypertension Guideline |
|---|---|---|
| Methodology | Nonsystematic literature review by expert committee including a range of study designs<br>Recommendations based on consensus | Critical questions and review criteria defined by expert panel with input from methodology team<br>Initial systematic review by methodologists restricted to RCT evidence<br>Subsequent review of RCT evidence and recommendations by the panel according to a standardized protocol |
| Definitions | Defined hypertension and prehypertension | Definitions of hypertension and prehypertension not addressed, but thresholds for pharmacologic treatment were defined |
| Treatment goals | Separate treatment goals defined for "uncomplicated" hypertension and for subsets with various comorbid conditions (diabetes and CKD) | Similar treatment goals defined for all hypertensive populations except when evidence review supports different goals for a particular subpopulation |
| Lifestyle recommendations | Recommended lifestyle modifications based on literature review and expert opinion | Lifestyle modifications recommended by endorsing the evidence-based Recommendations of the Lifestyle Work Group |
| Drug therapy | Recommended 5 classes to be considered as initial therapy but recommended thiazide-type diuretics as initial therapy for most patients without compelling indication for another class<br>Specified particular antihypertensive medication classes for patients with compelling indications, ie, diabetes, CKD, heart failure, myocardial infarction, stroke, and high CVD risk<br>Included a comprehensive table of oral antihypertensive drugs including names and usual dose ranges | Recommended selection among 4 specific medication classes (ACEI or ARB, CCB or diuretics) and doses based on RCT evidence<br>Recommended specific medication classes based on evidence review for racial, CKD, and diabetic subgroups<br>Panel created a table of drugs and doses used in the outcome trials |
| Scope of topics | Addressed multiple issues (blood pressure measurement methods, patient evaluation components, secondary hypertension, adherence to regimens, resistant hypertension, and hypertension in special populations) based on literature review and expert opinion | Evidence review of RCTs addressed a limited number of questions, those judged by the panel to be of highest priority. |
| Review process prior to publication | Reviewed by the National High Blood Pressure Education Program Coordinating Committee, a coalition of 39 major professional, public, and voluntary organizations and 7 federal agencies | Reviewed by experts including those affiliated with professional and public organizations and federal agencies; no official sponsorship by any organization should be inferred |

Abbreviations: ACEI, angiotensin-converting enzyme inhibitor; ARB, angiotensin receptor blocker; CCB, calcium channel blocker; CKD, chronic kidney disease; CVD, cardiovascular disease; JNC, Joint National Committee; RCT, randomized controlled trial

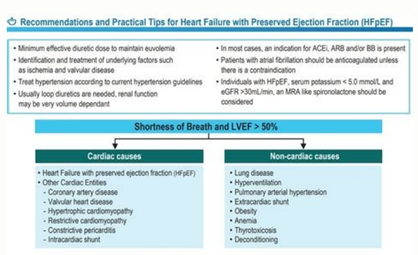
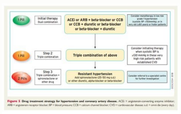



**Table 1. Classification of Hypertension Based on Office Blood Pressure (BP) Measurement**

| Category | Systolic (mm Hg) | | Diastolic (mm Hg) |
|---|---|---|---|
| Normal BP | <130 | and | <85 |
| High-normal BP | 130–139 | and/or | 85–89 |
| Grade 1 hypertension | 140–159 | and/or | 90–99 |
| Grade 2 hypertension | ≥160 | and/or | ≥100 |



Acc/aha hypertension treatment guidelines 2019. Acc/aha hypertension treatment guidelines 2020. Acc/aha hypertension treatment guidelines 2019 pdf. Acc/aha hypertension treatment guidelines 2021. Aha hypertension treatment guidelines 2019 pdf. Aha hypertension treatment guidelines 2021 pdf. 2017 acc/aha hypertension treatment guidelines. Aha hypertension treatment guidelines 2021.

rateHBPMhome blood pressure monitoringEHRelectronic health recordHFheart failureHFpEFheart failure with preserved ejection fractionHFrEFheart failure with reduced ejection fractionICHintracerebral hemorrhageJNCJoint National CommissionLVleft ventricularLVHleft ventricular hypertrophyMImyocardial infarctionMRImagnetic resonance imagingPADperipheral artery diseaseRASrenin-angiotensin systemRCTrandomized controlled trialSBPsystolic blood pressureSIHDstable ischemic heart diseaseTIAtransient ischemic attack2. BP and CVD Risk2.1. Observational RelationshipObservational studies have demonstrated graded associations between higher systolic blood pressure (SBP) and diastolic blood pressure (DBP) and increased CVD risk.S2.1-1,S2.1-2 In a meta-analysis of 61 prospective studies, the risk of CVD increased in a log-linear fashion from SBP levels 180 mm Hg and from DBP levels 105 mm Hg.S2.1-1 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.S2.1-2 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. Although the relative risk of incident CVD associated with higher SBP and DBP is smaller at older ages, the corresponding high BP–related increase in absolute risk is larger in older persons (≥65 years) given the higher absolute risk of CVD at an older age.S2.1-12.2. BP ComponentsEpidemiological studies have evaluated associations of SBP and DBP, as well as derived components of BP measurements (including pulse pressure, mean BP, and mid-BP), with CVD outcomes (Table 4). When considered separately, higher levels of both SBP and DBP have been associated with increased CVD risk.S2.2-1,S2.2-2 Higher SBP has consistently been associated with increased CVD risk after adjustment for, or within strata of, DBP.S2.2-3–S2.2-5 In contrast, after consideration of SBP through adjustment or stratification, DBP has not been consistently associated with CVD risk.S2.2-6,S2.2-7 Although pulse pressure and mid-BP have been associated with increased CVD risk independent of SBP and DBP in some studies, SBP (especially) and DBP are prioritized in the present document because of the robust evidence base for these measures in both observational studies and clinical trials and because of their ease of measurement in practice settings.S2.2-8–S2.2-11Table 4. BP Measurement DefinitionsBP MeasurementDefinitionSBPFirst Korotkoff sound*DBPFifth Korotkoff sound*Pulse pressureSBP minus DBPMean arterial pressureDBP plus one third pulse pressure†Mid-BPSum of SBP and DBP, divided by 22.3. Population RiskIn 2010, high BP was the leading cause of death and disability-adjusted life years worldwide.S2.3-1,S2.3-2 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.S2.3-3 In a follow-up study of 23 272 US NHANES (National Health and Nutrition Examination Survey) participants, >50% of deaths from coronary heart disease (CHD) and stroke occurred among individuals with hypertension.S2.3-4 Because of the high prevalence of hypertension and its associated increased risk of CHD, stroke, and end-stage renal disease (ESRD), the population-attributable risk of these outcomes associated with hypertension is high.S2.3-4,S2.3-5 In the population-based ARIC (Atherosclerosis Risk in Communities) study, 25% of the cardiovascular events (CHD, coronary revascularization, stroke, or HF) were attributable to hypertension. In the Northern Manhattan study, the percentage of events attributable to hypertension was higher in women (32%) than in men (19%) and higher in blacks (36%) than in whites (21%).S2.3-6 In 2012, hypertension was the second leading assigned cause of ESRD, behind diabetes mellitus (DM), and accounted for 34% of incident ESRD cases in the US population.S2.3-72.4. Coexistence of Hypertension and Related Chronic ConditionsRecommendation for Coexistence of Hypertension and Related Chronic ConditionsReferences that support the recommendation are summarized in Online Data Supplement 1.CORLOERecommendationIB-NR1.Screening for and management of other modifiable CVD risk factors are recommended in adults with hypertension.S2.4-1,S2.4-2SynopsisMany adult patients with hypertension have other CVD risk factors; a list of such modifiable and relatively fixed risk factors is provided in Table 5. Among US adults with hypertension between 2009 and 2012, 15.5% were current smokers, 49.5% were obese, 63.2% had hypercholesterolemia, 27.2% had DM, and 15.8% had chronic kidney disease (CKD; defined as estimated glomerular filtration rate [eGFR] 20%, 40.9% had a risk of 10% to 20%, and only 18.4% had a risk