

FROM THE 2017 GUIDELINE FOR THE PREVENTION, DETECTION, EVALUATION AND MANAGEMENT OF HIGH BLOOD PRESSURE IN ADULTS

Highlights

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

New blood pressure targets and treatment recommendations: For years, hypertension was classified as a blood pressure (BP) reading of 140/90 mm Hg or higher, but the updated guideline classifies hypertension as a BP reading of 130/80 mm Hg or higher. The updated guideline also provides new treatment recommendations, which include lifestyle changes as well as BP-lowering medications, as shown in Table 1.

TABLE 1. Classification of BP

BP Category	Systolic BP	Diastolic BP	Treatment or Follow-up
Normal	<120 mm Hg	and <80 mm Hg	Evaluate yearly; encourage healthy lifestyle changes to maintain normal BP
Elevated	120–129 mm Hg	and <80 mm Hg	Recommend healthy lifestyle changes and reassess in 3–6 months
Hypertension: stage 1	130–139 mm Hg	or 80–89 mm Hg	- If risk is less than 10%, start with healthy lifestyle recommendations and reassess in 3–6 months - If risk is greater than 10% or the patient has known clinical cardiovascular disease (CVD), diabetes mellitus, or chronic kidney disease, recommend lifestyle changes and BP-lowering medication (1 medication); reassess in 1 month for effectiveness of medication therapy - If goal is met after 1 month, reassess in 3–6 months - If goal is not met after 1 month, consider different medication or titration - Continue monthly follow-up until control is achieved
Hypertension: stage 2	≥140 mm Hg	or ≥90 mm Hg	- Recommend healthy lifestyle changes and BP-lowering medication (2 medications of different classes); reassess in 1 month for effectiveness - If goal is met after 1 month, reassess in 3–6 months - If goal is not met after 1 month, consider different medications or titration - Continue monthly follow-up until control is achieved

TABLE 2. Hypertensive Crises: Emergencies and Urgencies (See Section 11.2 of 2017 Hypertension Guideline)

Hypertensive Crises	Systolic BP	Diastolic BP	Treatment or Follow-up
Hypertensive urgency	>180 mm Hg	and/ >120 mm Hg	Many of these patients are noncompliant with antihypertensive therapy and do not have clinical or laboratory evidence of new or worsening target organ damage; reinstitute or intensify antihypertensive drug therapy, and treat anxiety as applicable
Hypertensive emergency	>180 mm Hg + target organ damage	and/ >120 mm Hg + target organ damage	Admit patient to an intensive care unit for continuous monitoring of BP and parenteral administration of an appropriate agent in those with new/progressive or worsening target organ damage (see Tables 19 and 20 in the 2017 Hypertension Guideline)

Pharmacologic recommendations:

The updated guideline recommends BP-lowering medication for those with stage 1 hypertension with clinical CVD or a 10-year risk of ASCVD 10% or greater, as well as for those with stage 2 hypertension. For stage 2, the recommendation is 2 BP-lowering medications in addition to healthy lifestyle changes, which is a more aggressive treatment standard—previous guidelines recommended starting patients on only 1 BP-lowering medication.

The guideline also updates the recommendations for specific populations. Because black adults are more likely to have hypertension than other groups, 2 or more antihypertensive medications are recommended to achieve a target of less than 130/80 mm Hg in this group, and thiazide-type diuretics and/or calcium channel blockers are more effective in lowering BP alone or in multistep regimens. Morbidity and mortality attributed to hypertension are more common in black and Hispanic adults compared with white adults.

For adults starting a new or adjusted drug regimen to treat hypertension, follow up with them each month to determine how well they are following and responding to their prescribed treatment until their BP is under control.¹⁴ For a full list of medications, see Table 18 in the 2017 Hypertension Guideline. **Emphasis on cardiovascular disease:** The updated guideline provides recommendations for patients with clinical CVD and makes new recommendations for using the **ASCVD risk calculator**.

- Use BP-lowering medication for **primary prevention** of CVD in adults with no history of CVD **and** an estimated 10-year ASCVD risk less than 10% **and** a systolic BP of 140 mm Hg or greater **or** a diastolic BP of 90 mm Hg or greater.^{5,10-17}
- Use BP-lowering medications for **secondary prevention** of recurrent CVD events in patients with clinical CVD **and** an average systolic BP of 130 mm Hg or greater **or** a diastolic BP of 80 mm Hg or greater **and** for **primary** prevention in adults with an estimated 10-year risk of ASCVD of 10% or greater with an average systolic BP of 130 mm Hg or greater **or** average diastolic BP of 80 mm Hg or greater.^{5,10-17}

No prehypertension: The updated guideline eliminates the term *prehypertension* and instead uses the term *elevated BP* for a systolic BP of 120 to 129 mm Hg and a diastolic BP of less than 80 mm Hg.

More hypertensive patients: Because the new definition of hypertension is lower (130/80 mm Hg), more people will be classified as having hypertension. However, most of these new patients can prevent hypertension-related health problems through lifestyle changes alone.

Hypertensive urgency vs hypertensive emergency

emergency: Hypertensive urgencies are associated with severe BP elevation in otherwise stable patients without acute or impending change in target organ damage or dysfunction. Hypertensive emergencies are severe elevations in BP associated with evidence of new or worsening target organ damage.

Focus on accurate measurements: To ensure accurate measurements, make sure the instrument you are using is properly calibrated. The updated guideline also stresses the basic processes for accurately measuring BP, including some simple yet critical actions before and during measurements. For accurate in-office measurements, do the following:

- Have the patient avoid smoking, caffeine, or exercise within 30 minutes before measurements; empty his or her bladder; sit quietly for at least 5 minutes before measurements; and remain still during measurements.
- Support the limb used to measure BP, ensuring that the BP cuff is at heart level and using the correct cuff size; don't take the measurement over clothes.
- Measure in both arms and use the higher reading; an average of 2 to 3 measurements taken on 2 to 3 separate occasions will minimize error and provide a more accurate estimate.

For more information about accurate measurements, see Tables 8 and 9 in the 2017 Hypertension Guideline.

Focus on self-monitoring: Office BPs are often higher than ambulatory or home BPs, so the updated guideline emphasizes having patients monitor their own BP for hypertension diagnosis, treatment, and management. Patients should follow these steps:

- Use the same validated instrument at the same time when measuring at home to more accurately compare results.
- Position themselves correctly, with the bottom of the cuff directly above the bend of the elbow.
- Optimally, take at least 2 readings 1 minute apart each morning before medication and each evening before supper. Ideally, obtain weekly readings 2 weeks after a treatment change and the week before a clinic visit.

Treatment recommendations: The

updated guideline presents new treatment recommendations, which include lifestyle changes as well as BP-lowering medications. These lifestyle changes can reduce systolic BP by approximately 4 to 11 mm Hg for patients with hypertension, with the biggest impacts being changes to diet and exercise.

- In addition to promoting the DASH diet, which is rich in fruits, vegetables, whole grains, and low-fat dairy products, the updated guideline recommends reducing sodium intake and increasing potassium intake to reduce BP. However, some patients may be harmed by excess potassium, such as those with kidney disease or who take certain medicines. See Table 15 in the 2017 Hypertension Guideline for more information.
- Each patient's ideal body weight is the best goal, but as a rule, expect about a 1 mm Hg BP reduction for every 1 kg reduction in body weight.
- Recommendations for physical activity include 90 to 150 minutes of aerobic and/or dynamic resistance exercise per week and/or 3 sessions per week of isometric resistance exercises.
- For patients who drink alcohol, aim for reducing their intake to 2 or fewer drinks daily for men and no more than 1 drink daily for women.

New targets for comorbidities: For patients with comorbidities, the updated guideline generally recommends prescribing BP-lowering medications in patients with clinical CVD and new stage 1 or stage 2 hypertension to target a BP of less than 130/80 mm Hg (this was previously less than 140/90 mm Hg). The guideline recommends different follow-up intervals based on the stage of hypertension, type of medication, level of BP control, and presence of target organ damage.