New BP Guidelines—130 is the New 140

New 2017 ACC/AHA Hypertension Guidelines, at a Glance

In this Heartbeat, we will present a synopsis of the new guidelines on the prevention, detection, evaluation and management of high blood pressure (BP) in adults. The emphasis on basics like proper BP measurement and intensive lifestyle change are two key revisions so that tens of millions more people might benefit from lowering their BP.

Use of these guidelines will improve cardiovascular (CV) health of U.S. adults. These guidelines are the first comprehensive update since the 2003 NHLBI’s JNC–7 report.1,2 The key change is the lowering of the definition of high BP from 140 mm Hg to 130 mm Hg in acknowledgement that complications can and do begin at lower BP levels.

This fits in with our “common sense” impression that the body is a closed plumbing system, and that higher pressure in that system will cause more wear and tear on the pump and the hoses. This results in more strokes, heart attacks and heart failure secondary to CV disease. The new recommendations raise a yellow flag earlier for physicians and patients so that appropriate intervention can begin to lower pressures to decrease wear and tear.

<table>
<thead>
<tr>
<th>SBP/DBP mm Hg</th>
<th>JNC-7</th>
<th>2017 ACC/AHA</th>
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<tbody>
<tr>
<td>&lt;120 and &lt; 80</td>
<td>Normal</td>
<td>Normal</td>
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<tr>
<td>120-129 and &lt;80</td>
<td>Prehypertension</td>
<td>Elevated BP</td>
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<tr>
<td>130-139 or 80-89</td>
<td>Prehypertension</td>
<td>Stage 1 HTN</td>
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<tr>
<td>140-159 or 90-99</td>
<td>Stage 1 HTN</td>
<td>Stage 2 HTN</td>
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<tr>
<td>≥160 or ≥100</td>
<td>Stage 2 HTN</td>
<td>Stage 2 HTN</td>
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New ACC/AHA Categories of BP in Adults

- **Normal**
  - Systolic <120 & diastolic < 80 mm Hg

- **Elevated BP**
  - Systolic 120-129 & diastolic < 80 mm Hg

- **Stage 1 HTN**
  - Systolic 130-139 or diastolic < 80-89 mm Hg

- **Stage 11 HTN**
  - Systolic ≥140 or diastolic ≥ 90 mm Hg

Patients with SPB and DPB in 2 categories should be assigned to the higher category.
These guidelines are based on a three-year review of over 1,000 studies, but the lower BP recommendations are based primarily on the SPRINT trial results. Using the new definitions, the prevalence of hypertension will increase from 31.9% to 45.6%—close to one-half of the U.S. population.

With the new updated guidelines, the number of individuals identified with high BP will increase from 72.2 million to 103.3 million. The greatest impact is expected among young individuals, where the prevalence of high BP may triple among men age < 45 years and double among women age < 45 years.

**Five Areas of Emphasis—Back to Basics**

1. Getting BP measurement right with a focus on accuracy—averaging BP values over time and incorporating home BP monitoring.

2. New BP classification system.

3. Decision-making that incorporates underlying CV risk (known CV disease, chronic kidney disease [CKD] and diabetic patients should be treated more aggressively).

4. Overall lower targets for ongoing management.

5. Strategies to improve BP control during treatment, with a refocus on lifestyle counseling (strong recommendation; high-quality evidence).

**Accurate Measurement of BP Visit Checklist (New)**

- Ensure measurement is properly calibrated.
- Have patient avoid smoking, caffeine or exercise within 30 minutes of measurement; empty bladder; sit quietly for at least five minutes; remain still for measurement.
- Support limb used to measure BP, ensuring BP cuff is at heart level and cuff size is correct.
- Always measure BP in both arms and use the higher reading.
- Use an average of ≥ 2 careful readings obtained on ≥ 2 occasions.

**Home BP measurement is encouraged (strong recommendation; high-quality evidence).**

**We realize that this is not easy, but we urge all to implement as many as possible.**

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**Treatment Recommendations Emphasize Lifestyle Change**

- **Diet and exercise** can reduce systolic BP by approximately 4 to 11 mm Hg for patients with hypertension
- **DASH or Mediterranean diet** rich in fruits, vegetables, whole grains along with reduced salt intake (avoiding processed foods)
- **Weight loss,** with a goal of ideal body weight
- **Exercise** 90 to 150 minutes/week of aerobic and/or dynamic resistance exercise and/or three sessions per week of isometric resistance exercises
- **Limit alcohol** to ≤ two drinks/day for men, ≤ one drink/day for women

**Pharmacotherapy**

- Four drug classes recommended as initial options; thiazide diuretics (chlorthalidone 12.5 mg is preferred—especially as stand-alone therapy—long-acting, with proven outcomes benefit.**

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**2017 Updated Classification and Management of High BP**

- **Normal BP**
  - Systolic BP (SBP) < 120 mm Hg and Diastolic BP (DBP) < 80 mm Hg

- **Prehypertension**
  - SBP 120-129 mm Hg or DBP 80-89 mm Hg

- **Hypertension Stage 1**
  - SBP 130-139 mm Hg or DBP 90-99 mm Hg

- **Hypertension Stage 2**
  - SBP ≥ 140 mm Hg or DBP ≥ 100 mm Hg

**Promote optimal lifestyle habits**

- BP-lowering drug therapy not needed
- Add BP-lowering drug therapy

**Pharmacologic therapy**

- For all patients: Appropriate follow-up and ongoing care
  - Perform appropriate follow-up based on blood pressure classification and treatment strategy
  - Follow medication and lifestyle adherence strategies where necessary

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**Prevent or ASCVD or 10-year CVD risk ≥ 10%**
Hydrochlorthiazide should not be used especially as stand-alone treatment\(^4\), calcium channel blockers (CCB), angiotensin converting enzyme inhibitors (ACE-I) and angiotensin receptor blockers (ARB) [strong recommendation; high-quality evidence].

- For *stage 1* hypertension, use medication only for those with clinical CVD, CKD, diabetes or a 10-year ASCVD risk of \(\geq 10\%\), otherwise focus on lifestyle factors—goal BP < 130/80 (strong recommendation; moderate-quality evidence [for SBP] and expert opinion [for DBP]). If after three to six months of lifestyle changes and carefully documented BP still above goal, medical treatment should be initiated with a single medication.

- For *stage 2* hypertension, use two BP-lowering medications of different classes, which is a *more aggressive* treatment standard than previous guidelines that recommended only one BP lowering medication (strong recommendation; expert opinion).

We prefer CCBs and diuretics in older patients and non-whites—depicted as a spectrum with mostly volume overload and low plasma renin activity (PRA)—which usually respond favorably to volume-depleting agents. An ACE-I or an ARB work better for mostly vasoconstriction (high PRA), which is more common in whites. A combination of an ACE-I or ARB with a CCB should be, at a minimum, part of every three-drug combination (a diuretic being the third). This is known as A-C-D therapy. Spironolactone should be the fourth add-on for resistant hypertension.\(^6\)

- Since our goal is to prevent CV events, there is compelling evidence that statin therapy should be added for most patients with hypertension.

- *Follow up monthly* to determine how well the patient is responding to treatment until his/her BP is under control.

**Comment**

Although studies do suggest that lower BP is better for most patients, including those older than 75 years, the balance of the potential benefits of hypertension management and medication costs, adverse effects and polypharmacy must be considered for each individual patient.

Shared decision-making between patients and their clinicians is required to arrive at an optimal treatment plan for each patient. There is little high-quality evidence in the literature about some patient populations, most notably the elderly.\(^7\) The guideline strongly supports a team-based, electronic medical record, and population health approaches to BP control.
References


