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Key Inforbits

- Background Information Hypertension
- Hypertension Lifestyle Modification Recommendations
- ACC/AHA 2017 Guideline Overview
- ACC/AHA 2017 Treatment Recommendation Changes



May is
National High
**Blood Pressure
Education
Month**

May is national high blood pressure education month [Internet]. Hughes & Hughes Family Dentistry; c2018. 2018 May 4 [cited 2018 May 25]. Available from: <https://hughesdentistry.com/may-is-national-high-blood-pressure-education-month/>

increases with age. Americans have a 90% lifetime risk of developing hypertension. Known as the “silent killer,” hypertension doesn’t produce warning signs or symptoms and most do not know they have high blood pressure until the numbers reach a potentially life-threatening level.¹ An update of the “Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure” (JNC 7) was released in December 2017 by the American College of Cardiology, American Heart Association and several other organizations. The new guideline goals will result in more Americans being diagnosed with hypertension.²

What You Need to Know About the ACC/AHA 2017 Hypertension Guidelines

1. The terms and categorizations may not be exactly what you’re used to...

The blood pressure ranges and terms have been adjusted in the most recent ACC/AHA/AAPA/ABC/ACPM/ACG/PhA/ASH/ASPC/NMA/PCNA Guidelines for the Prevention, Detection, Evaluation, and Treatment of High Blood Pressure in Adults. This was needed because data is pointing to a significant CV morbidity risk difference from one blood pressure category to the next. These

adjustments will result in nearly a 15% increase in Americans categorized as hypertensive when

compared to JNC-7 guidelines. **Table 1** shows the categories and ranges of JNC-7 versus that of the

Table 1: A JNC 7 and 2017 ACC/AHA Comparison.

SBP		DBP	JNC 7	2017 ACC/AHA
< 120	and	< 80	Normal BP	Normal BP
120-129	and	< 80	Prehypertension	Elevated BP
130-139	or	80-89	Prehypertension	Stage 1 Hypertension
140-159	or	90-99	Stage 1 Hypertension	Stage 2 Hypertension
≥ 160	or	≥ 100	Stage 2 Hypertension	Stage 2 Hypertension

ACC/AHA 2017 guidelines.³ There has been a slight adjustment of some of the terminology, as well. The main change being that the term “prehypertension” was dropped and the 120-129/<80 mmHg range was renamed “Elevated Blood Pressure.”⁴

2. The blood pressure goal is <130/80 mmHg. End of story.

As you know, several patient aspects used to be taken into consideration before assigning a patient a blood pressure goal. Not anymore! Except in cases where clinical judgement might render further blood pressure adjustment unnecessary (e.g. a frail elderly patients), all adult patients treated in the outpatient setting have a blood pressure goal of <130/<80 mmHg. No additional considerations for comorbidities or age need to be considered.^{2,4}

3. There’s still no reason to shoot for a systolic blood pressure < 120 mmHg.

Finding the perfect blood pressure goal for a hypertensive patient has been difficult. Studies have shown significant stroke reduction and an overall reduction in CV events with lowered blood pressure, but by how much? Previously, lowering a hypertensive patient’s systolic blood pressure beyond <140 mmHg showed no benefit, so guidelines did not recommend it. With studies now showing an added benefit, a lower goal, <130 mmHg, has taken its place. There is still no reason to aim for a systolic blood pressure <120 mmHg in a hypertensive patient.^{2,4}

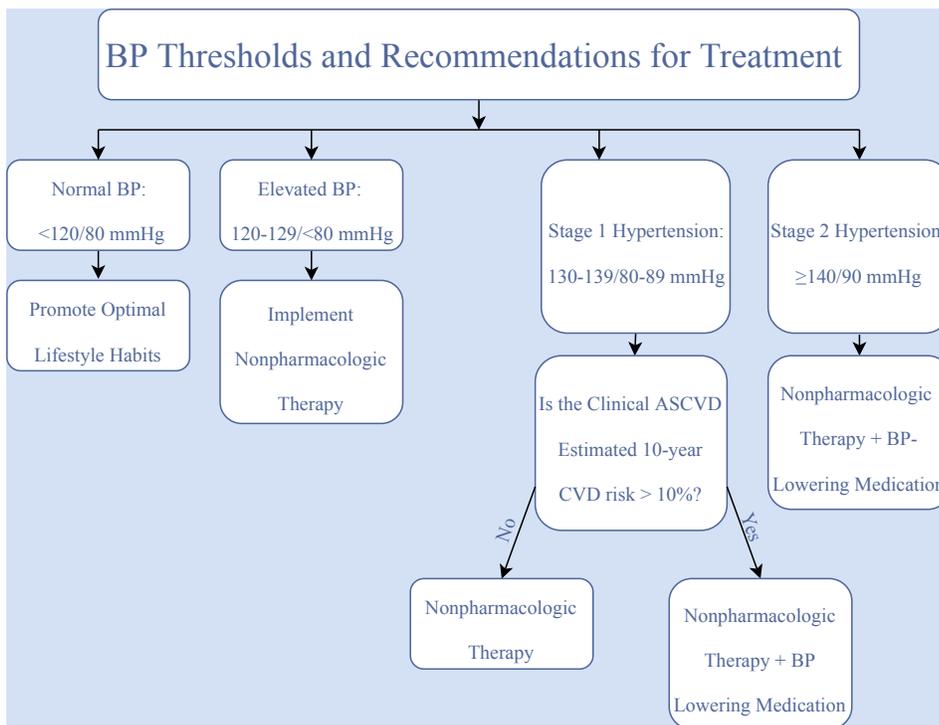
4. Out-of-office BP monitoring is clinically useful.

Out-of-office monitoring is a better predictor of long-term CV outcomes than office-based BP measurement and can lead to clinically useful reductions in blood pressure when used in hypertension management. It is recommended to use out-of-office monitoring to confirm the diagnosis, aide in the titration of medications, and to rule out conditions such as white coat or masked hypertension. Patients should use the same validated instrument at the same time when measuring at home and to take at least two readings 1 minute apart before morning medication and each evening before supper to best utilize this concept.^{2,4}

5. Use the ACC/AHA Pooled Cohort Risk Assessment to determine atherosclerotic cardiovascular disease (ASCVD) risk.

When patients present without established CV disease, calculate the patient’s CV disease risk before

Figure 1: Treatment Flowchart



deciding on pharmacotherapy. If the BP is <140/90 mmHg in patients with an estimated 10-year ASCVD risk <10%, recommend lifestyle modification instead of pharmacotherapy and follow-up every 3-6 months. Initiate pharmacotherapy when the BP is >140/90 mmHg. Drug therapy and lifestyles modifications should be recommended if patients have an established CV disease (stroke, heart failure, coronary heart disease) or a 10-year ASCVD risk of 10% or greater.^{2,4}

Adapted from: Whelton PK, Carey RM, Aronow WS, et al. 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: a report of the american college of cardiology/american heart association task force on clinical practice guidelines. *J Am Coll Cardiol.* 2018;71:127-248.

6. Lifestyle-change refresher.

Since lifestyle modifications are appropriate for all patients, reducing systolic BP by about 4-11 mmHg, it is important for pharmacists to recommend implementation of the following when applicable:

- weight loss → expect about a 1 mmHg BP reduction for every 1 kg reduction in body weight
- heart healthy diet (DASH-dietary approaches to stop hypertension- diet) → rich in fruits, vegetables, whole grains, and low-fat dairy products
- sodium reduction
- potassium supplementation (unless contraindicated drugs, chronic kidney disease, etc.)
- increase physical activity to 90-150 minutes of aerobic or resistance exercise per week
- limit alcohol consumption → ≤ 2 drinks daily for men and 1 drink for women²

7. First-line therapy continues as either angiotensin converting enzyme (ACE) inhibitors/ angiotensin receptor blockers (ARBs)/thiazide diuretics, or calcium channel blockers (CCB).

Being an official update of JNC-7, the ACC/AHA 2017 guidelines reemphasize that beta-blockers are only appropriate in patients with heart failure or a history of myocardial infarction, and they are no longer considered a first-line treatment option. First-line options, as established in JNC-8 are as follows: ACE-inhibitors, ARBs, thiazides/ thiazide-like diuretics, and calcium-channel blockers. For the first time, the guidelines express a preference for chlorthalidone over other thiazide diuretics.^{2,3,5}

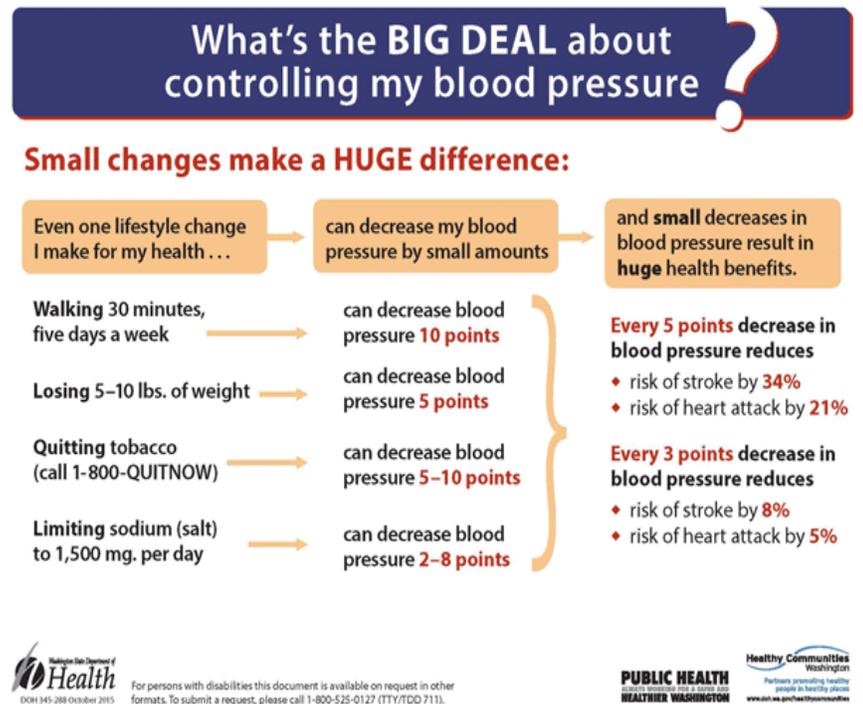
8. With adjusted goals, lower blood pressures are treated more aggressively.

For all patients with stage 2 hypertension (BP $\geq 140/90$ mmHg), the guidelines recommend starting with 2 agents from different pharmacological classes. Some special population recommendations were updated, as well. Since CV disease is more prevalent in the African-American population, it is recommended for black adults to be started on 2 more antihypertensive medications if their blood pressure is $>130/80$ mmHg, with thiazide-type diuretics and or/ calcium channel blockers being most effective. Always target different “systems” when choosing therapy, for example, combining an ACEI or ARB with a thiazide diuretic or CCB would be appropriate. However, do not use an ACEI with an ARB, because they both act on the same system. Consider fixed-dose combinations when possible as lighter pill burdens tend to improve adherence.^{2,4}

9. Spironolactone and Treatment Resistant Hypertension

Resistant hypertension is still defined as BP above goal while on 3 antihypertensive medications including a diuretic or needing 4 or more medications to control BP. What next? A common question is, what is your next step for add on therapy after all first line options have been used? Beta blockers, alpha blockers, and aldosterone antagonist have all previously been used. In 2015, a trial demonstrated the superiority of spironolactone over both doxazosin and bisoprolol in the treatment of

Figure 2: Lifestyle Modifications



Manage blood pressure [Internet]. Washington State Department of Health; c2018. [cited 2018 May 29]. Available from: <https://www.doh.wa.gov/YouandYourFamily/IllnessandDisease/HeartDisease/ManageBloodPressure>

resistant hypertension. In most cases, spironolactone should be your next choice in treatment. However, don't forget to check potassium first!^{2,4}

10. Don't forget to follow up.

Monthly follow up for patients is recommended if they have not reached their goal of $\leq 130/80$ mmHg, drug therapy is added, or existing therapy is modified. This frequent follow up time might be difficult for many primary care providers to accommodate. Here to fill in the gaps are mid-level practitioners and pharmacists (with collaborative practice agreements!). Chronic disease management using collaborative care models will hopefully become the norm. When goal is met, follow up time can be reduced to every 3-6 months.^{2,4}

Summary

There are several changes in blood pressure goals and treatment due to the new ACC/AHA 2017 Hypertension Guidelines. All patients should be treated with a blood pressure goal of $<130/90$ mmHg. Treatment recommendations have not changed with the exception of chlorthalidone being the preferred thiazide diuretic and spironolactone's new, more defined role. Lifestyle modifications are still indicated for all patients. Hypertension is very prevalent, asymptomatic disease that should be treated to prevent future CV events, morbidity, and mortality.

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7. Manage blood pressure [Internet]. Washington State Department of Health; c2018. [cited 2018 May 29]. Available from: <https://www.doh.wa.gov/YouandYourFamily/IllnessandDisease/HeartDisease/ManageBloodPressure>



The last “dose” ... “Trust is like blood pressure. It's silent, vital to good health, and if abused it can be deadly.” - Frank K. Sonnenberg (American author, 1955 -)

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