

CLINICAL GUIDELINE:

HYPERTENSION

Primary Prevention of Cardiovascular Disease



Physician Clinical Integration
Network, LLC

Scope

Despite substantial improvements in atherosclerotic cardiovascular disease (ASCVD) outcomes in recent decades, ASCVD remains the leading cause of morbidity and mortality globally. ASCVD is also the leading cause of death in the United States for most racial/ethnic groups, with an estimated cost of >\$200 billion annually in healthcare services, medications, and lost productivity [1].

Hypertension accounts for more ASCVD deaths than any other modifiable ASCVD risk factor in the U.S. Approximately one in three U.S. adults (about 75 million people) have high blood pressure. Of those, only 54% have their blood pressure under control. High blood pressure is one of the most commonly diagnosed chronic diseases for which treatment is available [2].

Guidance

The PCIN Quality Committee and its designees reviewed the available information in the medical literature and societal guidelines on the evaluation and management for hypertensive patients in the Primary Care setting, as well as information derived from their clinical practices to devise these guidelines.

The American College of Cardiology and the American Heart Association Task Force on Clinical Guidelines has published hypertension guidelines for 2019 (adapted from recommendations published in the 2017 Hypertension Clinical Practice Guidelines).

Population Included

Adults ≥ 18 years of age diagnosed with essential hypertension.

Exclusions

- Patients with evidence of end stage renal disease (ESRD), dialysis, or renal transplant
- Pregnant females

Recommendations

- ✓ Promoting a heart-healthy lifestyle is the most important tool in preventing ASCVD.
- ✓ A team-based care approach is an effective strategy for the prevention of cardiovascular disease. Individuals should be evaluated for socioeconomic barriers that might influence treatment decisions.
- ✓ Nonpharmacological interventions are recommended for adults with elevated blood pressure or hypertension (Table 1). This includes:
 - Weight loss
 - Heart-healthy diet
 - Sodium reduction
 - Potassium supplementation
 - Structured exercise program
 - Limited alcohol consumption
- ✓ Blood pressure (BP)-lowering medications are recommended for adults with an estimated 10-year ASCVD risk $\geq 10\%$ **and** an average SBP > 130 mmHg or diastolic blood pressure (DBP) > 80 mmHg.
 - Target BP goal $< 130/80$ mmHg is recommended.
- ✓ For adults diagnosed with hypertension and chronic kidney disease, treatment goal of $< 130/80$ mmHg is recommended.
- ✓ For adults diagnosed with hypertension and Type 2 diabetes, BP-lowering medications should be initiated with any BP $> 130/80$; treatment goal of $< 130/80$ mmHg.
- ✓ BP-lowering medications are recommended for adults with an estimated 10-year ASCVD risk $< 10\%$ **and** either SBP ≥ 140 mmHg or DBP ≥ 90 mmHg (Figure 1).
- ✓ For adults with confirmed hypertension and no additional markers of increased ASCVD risk, a BP target of $< 130/80$ mmHg may be reasonable.

Rationale

Hypertension is a major risk factor for cardiovascular disease and controlling blood pressure has the potential to significantly reduce rates of morbidity and death associated with cardiovascular disease [3].

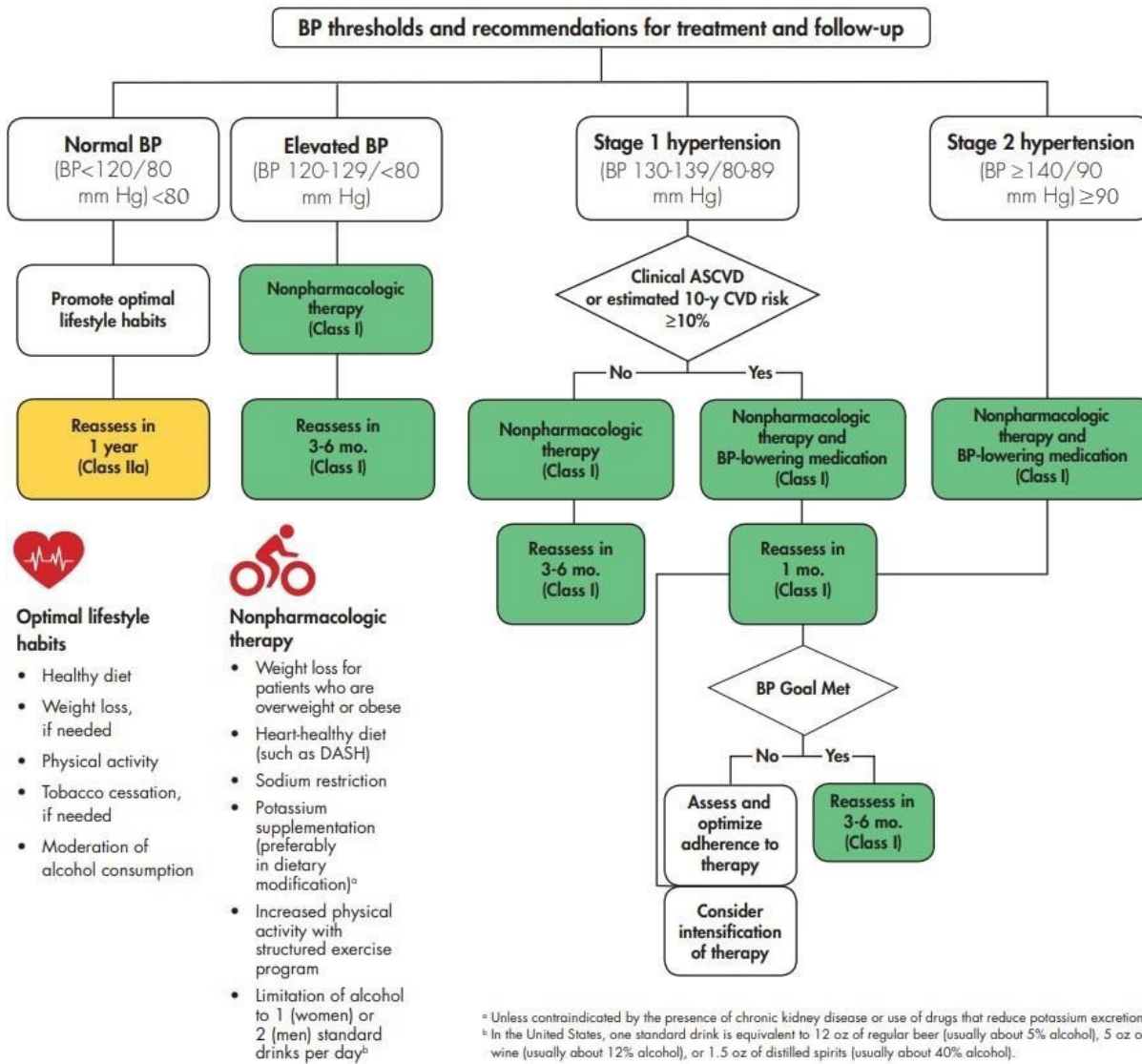
References

1. Arnett, D. K., Blumenthal, R. S., Albert, M. A., Buroker, A. B., Goldberger, Z. D., Hahn, E. J., Ziaeian, B. (2019). 2019 ACC/AHA Guideline on the Primary Prevention of Cardiovascular Disease. *Journal of the American College of Cardiology*. doi:10.1016/j.jacc.2019.03.010
2. State Heart Disease and Stroke Prevention Program Addresses High Blood Pressure Fact Sheet | DHDSP | CDC. (2016, June 16). Retrieved June 11, 2019, from https://www.cdc.gov/dhdsp/data_statistics/fact_sheets/fs_state_hbp.htm
3. Aleyadeh, W., Hutt-Centeno, E., Ahmed, H. M., & Shah, N. P. (2019). Hypertension guidelines: Treat patients, not numbers. *Cleveland Clinic Journal of Medicine*, 86(1), 47-56. doi:10.3949/ccjm.86a.18027
4. Whelton PK, Carey RM, Aronow WS, Casey Jr DE, Collins KJ, Dennison Himmelfarb C, DePalma SM, Gidding S, Jamerson KA, Jones DW, MacLaughlin EJ, Muntner P, Ovbiagele B, Smith Jr SC, Spencer CC, Stafford RS, Taler SJ, Thomas RJ, Williams Sr KA, Williamson JD, Wright Jr JT, 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, *Journal of the American College of Cardiology* (2017), doi: 10.1016/j.jacc.2017.11.006



Appendix

Figure 1: BP Thresholds and Recommendations for Treatment



REASSESSMENT CHECKLIST

- Measure BP
- Identify white-coat hypertension or a white-coat effect
- Document adherence to treatment
- Reinforce importance of treatment
- Assist with treatment to achieve BP target
- Evaluate for orthostatic hypotension in select patients (eg, older or with postural symptoms)
- Talk to your patients about substances that should be avoided, limited or stopped to help maintain a healthy BP.

Whelton PK, Carey RM, Aronow WS, Casey Jr DE, Collins KJ, Dennison Himmelfarb C, DePalma SM, Gidding S, Jamerson KA, Jones DW, MacLaughlin EJ, Muntner P, Ovbigele B, Smith Jr SC, Spencer CC, Stafford RS, Taler SJ, Thomas RJ, Williams Sr KA, Williamson JD, Wright Jr JT, 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, Journal of the American College of Cardiology (2017), doi: 10.1016/j.jacc.2017.11.006

Table 1:

Best Proven Nonpharmacological Interventions for Prevention and Treatment of Hypertension

	Nonpharmacological Intervention	Goal	Approximate Impact on Systolic Blood Pressure (SBP)	
			Hypertension	Normotension
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 mmHg	-2/3 mmHg
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 mmHg	-3 mmHg
Reduced Sodium Intake	Dietary Sodium	Optimal goal is <1500mg/d, but aim for at least a 1000mg/day reduction in most adults.	-5/6 mmHg	-2/3 mmHg
Enhanced Potassium Supplementation	Dietary Potassium	Aim for 3500–5000mg/d, preferably by consumption of a diet rich in potassium.	-4/5 mmHg	-2 mmHg
Physical Activity	Aerobic	<ul style="list-style-type: none"> • 90–150 min/wk • 65-75% heart rate reserve 	-5/8 mmHg	-2/4 mmHg
	Dynamic Resistance	90-150 min/wk 50-80% 1 rep maximum 6 exercises, 3 sets/exercise, 10 repetitions/set	-4 mmHg	-2 mmHg
	Isometric Resistance	4 x 2min (hand grip), 1- minute rest between exercises, 30-40% maximum voluntary contraction, 3 sessions/week <ul style="list-style-type: none"> • 8-10 weeks 	-5 mmHg	-4 mmHg

Whelton PK, Carey RM, Aronow WS, Casey Jr DE, Collins KJ, Dennison Himmelfarb C, DePalma SM, Gidding S, Jamerson KA, Jones DW, MacLaughlin EJ, Muntner P, Ovbigele B, Smith Jr SC, Spencer CC, Stafford RS, Taler SJ, Thomas RJ, Williams Sr KA, Williamson JD, Wright Jr JT, 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, Journal of the American College of Cardiology (2017), doi: 10.1016/j.jacc.2017.11.006

Approved: 9/26/2019

