

# Clinical Practice Guidelines

## Hypertension (High Blood Pressure)

### Objective

The purpose is to guide the appropriate diagnosis and management of Hypertension.

### Guideline

These are only guidelines, and are based on the best available information at the time. These may not be “all inclusive” as new medications and treatments are ever-evolving. These guidelines are updated by MDwise at least biannually as national guidelines are updated.

MDwise supports hypertension recommendations from the Eighth Joint National Committee (JNC 8) and 2017 AHA/ACC Guidelines for the management of High Blood Pressure.

2014 Evidence-Based Guideline for the Management of High Blood Pressure in Adults: Report from the Panel Members Appointed to the Eighth Joint National Committee (JNC 8)

Guidelines are included in the MDwise Provider Manual and posted on the MDwise Web site. They are available individually as requested.

### Assessment & Diagnosis

A physician will diagnose Hypertension based on a patient’s blood pressure (average of  $\geq 2$  careful readings obtained on  $\geq 2$  occasions). The patient’s age, race, and other comorbid conditions will also be assessed.

#### Categories of Blood Pressure in Adults\*

Blood Pressure Category	SPB		DBP
Normal	< 120 mm Hg	and	< 80 mm Hg
Elevated	120 - 129 mm Hg	and	< 80 mm Hg
<b>Hypertension</b>			
Stage 1	130 - 139 mm Hg	or	80 - 89 mm Hg
Stage 2	$\geq 140$	or	$\geq 90$ mm Hg

\*Patients with SBP and DBP in 2 different categories should be assigned to the higher BP category

## Blood Pressure Thresholds for and Goals of Pharmacological treatment for Hypertension

Clinical Condition (s)	B/P Threshold mm Hg	B/P Goal mm Hg
Clinical CVD or 10 year ASCVD risk $\geq 10\%$	$\geq 130/80$	$\geq 130/80$
No Clinical CVD and 10 year ASCVD risk $<10\%$	$\geq 140/90$	$<130/80$
Older patients ( $\geq 65$ ; non-institutionalized, ambulatory, community-living adults)	$\geq 130$ (SBP)	$<130$ (SBP)
Specific Comorbidities		
Diabetes mellitus	$\geq 130/80$	$<130/80$
Chronic kidney disease	$\geq 130/80$	$<130/80$
Chronic kidney disease (post renal transplant)	$\geq 130/80$	$<130/80$
Heart failure	$\geq 130/80$	$<130/80$
Stable ischemic heart disease	$\geq 130/80$	$<130/80$
Secondary stroke prevention	$\geq 140/80$	$<130/80$
Secondary stroke prevention (lacunar)	$\geq 130/80$	$<130/80$
Peripheral arterial disease	$\geq 130/80$	$<130/80$

## Treatment

Treatment is based on blood pressure, age and comorbidities. For recommendations on when to initiate pharmacological treatment, see previous section.

### For all patients Initiate or maintain lifestyle modification:

- Weight management with ideal body weight (IBW) as the goal,
- Increased physical activity including aerobic, dynamic resistance and isometric resistance with the goal total of 90-150 min/week,
- Moderate consumption of alcohol (for men  $\leq 2$  drinks daily and women  $\leq 1$  drink daily)
- Sodium reduction to  $<1,500$  mg/day,
- Emphasis on increased consumption of fresh fruits, vegetables, and low-fat dairy products, according to the DASH dietary program
- Encourage smoking cessation if needed

### For patients with comorbid Diabetes:

- Are automatically placed in the high-risk category.
- Initial antihypertensive treatment should include a thiazide-type diuretic, angiotensin-converting enzyme inhibitor (ACEI), or angiotensin receptor blocker (ARB), or dihydropyridine calcium channel blocker (DHP-CCB), alone or in combination
- If black, initiate a thiazide-type diuretic or DHP-CCB alone or in combination
- Assess blood tests for electrolytes and renal function 2 – 4 weeks after initiating therapy

**For patients with comorbid Chronic Kidney Disease (CKD):**

- Are automatically placed in the high-risk category.
- Initial antihypertensive treatment should include an ACEI or ARB to improve kidney outcomes, alone or in combination with another drug class. (Includes all races with or without diabetes)
- Assess blood tests for electrolytes and renal function 2 – 4 weeks after initiating therapy

**For continuing pharmacological management in all patients:**

- Continue to treat in order to reach and maintain recommended blood pressure goal based on age and comorbidities
- Continue to encourage lifestyle modifications and smoking cessation
- If goal blood pressure is not reached in one month from initiating therapy, titrate the dose of the initial drug to the maximum dose before adding a second drug from a recommended class (thiazide-type diuretic, DHP-CCB, ACEI, ARB)
- If goal blood pressure is not reached with 2 drugs, add and titrate a 3rd drug from a recommended class (thiazide-type diuretic, DHP-CCB, ACEI, ARB)
- Do not use an ACEI and ARB together
- If goal blood pressure cannot be reached with 3 drugs using the recommended classes above, antihypertensive drugs from other classes may be used (beta-blockers [BB] aldosterone antagonist, etc.)
- If goal blood pressure cannot be reached after 2-3 medications, consider referral to physician with expertise in managing hypertension
- Continue to reassess BP every 3 – 6 months

## References

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- James PA, Oparil S, Carter BL, et al. 2014 Evidence-Based Guideline for the Management of High Blood Pressure in Adults: Report from the Panel Members Appointed to the Eighth Joint National Committee (JNC 8). JAMA 2014; doi:10.1001/jama.2013.284427.
- 2017 AHA/ACA Guidelines for the management of high Blood Pressure. 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.

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