

Clinical Guidelines for Hypertension and Cardiovascular Risk Management

1. Introduction

Hypertension, commonly known as high blood pressure, is a chronic medical condition that affects millions worldwide. Uncontrolled hypertension increases the risk of cardiovascular diseases, stroke, heart failure, and chronic kidney disease. Early detection, lifestyle modification, and pharmacological intervention are critical for effective management.

This document provides evidence-based guidelines for the diagnosis, treatment, and follow-up of adult patients with hypertension.

2. Blood Pressure Classification (Adults)

Category	Systolic (mmHg)	Diastolic (mmHg)
Normal	<120	<80
Elevated	120–129	<80
Hypertension Stage 1	130–139	80–89
Hypertension Stage 2	≥140	≥90
Hypertensive Crisis	>180	>120

3. Risk Assessment

1. Assess cardiovascular risk factors:

- Age, sex, family history
- Smoking status

- Diabetes mellitus
- Dyslipidemia

2. Target organ damage evaluation:

- Heart: left ventricular hypertrophy
- Kidneys: microalbuminuria, CKD
- Brain: prior stroke or transient ischemic attack

3. Laboratory tests recommended:

- Serum creatinine, eGFR
- Electrolytes: sodium, potassium
- Lipid profile
- Fasting glucose or HbA1c

4. Lifestyle Modifications

Lifestyle interventions are the first step in hypertension management:

1. Dietary Changes

- Sodium intake: <2,300 mg/day
- Follow the DASH diet: high in fruits, vegetables, and low-fat dairy, low in saturated fat

2. Physical Activity

- At least 150 minutes/week of moderate aerobic exercise or 75 minutes/week of vigorous exercise

3. Weight Management

- Maintain BMI between 18.5–24.9
- Target waist circumference: <102 cm (men), <88 cm (women)

4. Alcohol and Smoking

- Alcohol: men ≤ 2 drinks/day, women ≤ 1 drink/day
 - Complete smoking cessation recommended
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5. Pharmacological Treatment

5.1 First-Line Medications

- **ACE inhibitors** (e.g., Lisinopril)
- **Angiotensin Receptor Blockers (ARBs)** (e.g., Losartan)
- **Thiazide diuretics** (e.g., Hydrochlorothiazide)
- **Calcium Channel Blockers** (e.g., Amlodipine)

5.2 Combination Therapy

- Consider dual therapy if target BP is not achieved within 1 month of monotherapy.
- Common combinations: ACE inhibitor + Thiazide, ARB + CCB

5.3 Special Populations

- **Diabetic patients:** ACE inhibitors or ARBs preferred
 - **Chronic kidney disease:** ACE inhibitors or ARBs preferred
 - **Elderly patients:** Start low-dose therapy, monitor for orthostatic hypotension
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6. Monitoring and Follow-Up

- Initial follow-up: 1 month after treatment initiation
- Once stable: every 3–6 months

- Monitor kidney function and electrolytes for patients on ACE inhibitors, ARBs, or diuretics
 - Encourage home BP monitoring
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7. Hypertensive Emergencies

- **Definition:** BP >180/120 mmHg with target organ damage
 - **Management:**
 1. Immediate hospitalization
 2. IV antihypertensives: Nitroglycerin, Labetalol
 3. Continuous monitoring of cardiovascular and renal status
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8. Patient Education

- Educate patients about:
 - Importance of adherence to medications
 - Lifestyle modifications
 - Recognizing symptoms of hypertensive crisis (headache, chest pain, vision changes)
 - Regular follow-up and monitoring
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9. Cardiovascular Risk Reduction

- Address all modifiable risk factors:
 - Lipid management

- Glycemic control
 - Smoking cessation
 - Physical activity and diet
 - Aspirin therapy may be considered in high-risk patients per guidelines
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10. References

1. Whelton PK et al. *2017 ACC/AHA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults*. J Am Coll Cardiol. 2018;71:e127–e248.
2. Carey RM et al. *2021 Clinical Practice Guidelines for Hypertension*. Hypertension. 2021;77:e1–e10.
3. Chobanian AV et al. *The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7)*. JAMA. 2003;289:2560–2572.