REBELLIOUS MEDIC · CARDIOLOGY ALGORITHM SERIES

Hypertension Management

BP classification, risk-based treatment thresholds/goals, initial pharmacotherapy, resistant hypertension, and hypertensive emergency.

2025
AHA/ACC/AANP/AAPA/ABC/ACCP/ACPM/AGS/AMA/ASPC/NMA/PCNA
High Blood Pressure Guideline
Jones et al. · JACC 2025;86(18):1567–1678

COR — I · Recommended | IIa · Reasonable | IIb · May Consider | III · No Benefit / Harm

1 Blood Pressure Categories in Adults

Higher of SBP/DBP category applies; excludes pregnancy

CATEGORY	SBP	DBP
Normal	<120 mmHg	and <80 mmHg
Elevated	120–129 mmHg	and <80 mmHg
Stage 1 Hypertension	130–139 mmHg	or 80–89 mmHg
Stage 2 Hypertension	≥140 mmHg	or ≥90 mmHg

2 Treatment Threshold — When to Initiate Pharmacotherapy

Increased risk = diabetes, CKD, or 10-yr PREVENT CVD risk ≥7.5%

- I A — **All adults** — initiate medications when SBP ≥**140** or DBP ≥**90mmHg** to reduce CVD events/mortality.
- I A — **Clinical CVD** (CHD, stroke, HF) — initiate when SBP ≥**130** or DBP ≥**80mmHg**.
- I A — No clinical CVD but **diabetes, CKD,** or 10-yr PREVENT risk **≥7.5%** — initiate when SBP ≥**130** or DBP ≥**80mmHg**.
- I B-R — No clinical CVD, PREVENT risk **<7.5%** — initiate if SBP remains ≥130 or DBP ≥80 after **3–6mo lifestyle trial**.

3 BP Treatment Goal & Initial Therapy

TREATMENT GOAL

- I A — Increased CVD risk — SBP goal **<130**, encourage **<120mmHg**.
- I B-R — Increased CVD risk — DBP target **<80mmHg**.
- IIb B-NR — Not at increased risk — SBP <130 (encourage <120) may be reasonable.

INITIAL MONOTHERAPY VS. COMBINATION

- I B-R — **Stage 2** (SBP ≥140 and DBP ≥90) — 2 first-line agents, ideally single-pill combination.
- IIa C-EO — **Stage 1** + high-risk features — initial combination also favored.
- IIa C-EO — Preferred: **RAS blocker + thiazide**, or **RAS blocker + DHP-CCB**.

4 Diabetes/CKD — RAAS Inhibition & Resistant Hypertension

DIABETES / CKD — RAAS INHIBITION

- I B-R — **Diabetes** + CKD (eGFR <60 or albuminuria ≥30mg/g) — **ACEi or ARB** recommended; consider even with mild albuminuria.
- I A — **CKD** (eGFR <60, albuminuria ≥30mg/g) — **RAASi** (ACEi or ARB, not both) recommended.

RESISTANT HTN & RENAL DENERVATION (≥3 agents incl. diuretic)

- I C-EO — Detailed evaluation for **secondary causes** including removal of interfering medications.
- I C-EO — Candidates for **renal denervation (RDN)** should be evaluated by a multidisciplinary team; discuss via shared decision-making.

5 Hypertensive Emergency Management

SBP >180 and/or DBP >120mmHg + acute target organ damage

- I B-NR — **ICU admission** recommended for continuous BP/target-organ monitoring and consideration of parenteral therapy.
- I C-LD — No compelling condition — reduce SBP by **≤25% in first hour**; then <160/100 over 2–6h; then cautiously to 130–140mmHg over 24–48h. **Aortic dissection** — SBP <120mmHg within the first hour.
- III Harm · B-NR — Severe HTN (>180/120) hospitalized for **noncardiac** reasons, **no** target organ damage — intermittent additional IV/oral agents **not recommended**.

AGENT	NOTES
Nicardipine / Clevidipine	DHP-CCB; titratable IV infusion, no negative inotropy — first-line in most emergencies
Labetalol	Combined α/β-blocker; avoid in reactive airway disease, bradycardia, high-grade AV block
Nitroglycerin	Reserve for ACS/acute pulmonary edema; avoid if volume-depleted
Nitroprusside	Potent; requires arterial line; cyanide/thiocyanate toxicity risk with prolonged use
Phentolamine	Catecholamine-excess states (pheochromocytoma, cocaine, MAOI interaction)

Jones DW, Ferdinand KC, Taler SJ, et al. 2025 AHA/ACC/AANP/AAPA/ABC/ACCP/ACPM/AGS/AMA/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure. *J Am Coll Cardiol.* 2025;86(18):1567–1678.