



HyperTensia 2025



International Guidelines for Hypertension Treatment

The treatment of hypertension is based on globally accepted guidelines that emphasize risk assessment, lifestyle modifications, and pharmacological therapy. The major international guidelines include those from:

1. American College of Cardiology (ACC) / American Heart Association (AHA) – 2017
2. European Society of Cardiology (ESC) / European Society of Hypertension (ESH) – 2018
3. International Society of Hypertension (ISH) – 2020
4. World Health Organization (WHO) – 2021

1. Blood Pressure Classification (As per ACC/AHA & ESC/ESH)

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

✓ AHA Guidelines have a lower threshold for Stage 1 Hypertension (130/80 mmHg) compared to ESC/ESH (140/90 mmHg).

✓ WHO follows the 140/90 mmHg cut-off for diagnosing hypertension.

2. Global Treatment Guidelines

A. Lifestyle Modifications (First-Line for All Patients)



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- ✓ Salt Restriction (<5g/day, as per WHO recommendation)
- ✓ DASH Diet / Mediterranean Diet (High in fruits, vegetables, low-fat dairy)
- ✓ Regular Exercise (150 min/week of moderate activity)
- ✓ Weight Loss (BMI <25 kg/m², waist circumference <102 cm for men, <88 cm for women)
- ✓ Limit Alcohol & Quit Smoking
- ✓ Stress Management (Yoga, Meditation, CBT)

When to start medications?

- ACC/AHA (USA): If BP ≥130/80 mmHg with high cardiovascular risk OR BP ≥140/90 mmHg
- ESC/ESH (Europe): If BP ≥140/90 mmHg
- WHO: If BP ≥140/90 mmHg, or ≥130/80 mmHg in diabetics or those with kidney disease

B. Pharmacological Treatment (Stepwise Approach)

First-Line Antihypertensive Drugs (As per ACC/AHA, ESC/ESH, WHO, ISH):

Drug Class	Examples	Indications
ACE Inhibitors (ACEi)	Lisinopril, Ramipril	Preferred for diabetes, kidney disease, heart failure
Angiotensin Receptor Blockers (ARBs)	Losartan, Telmisartan	Alternative to ACEi (less cough side effect)
Calcium Channel Blockers (CCBs)	Amlodipine, Nifedipine	First-line for elderly, Black patients



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Drug Class	Examples	Indications
Thiazide Diuretics	Chlorthalidone, Hydrochlorothiazide	First-line, good for salt-sensitive HTN
Beta-Blockers	Metoprolol, Carvedilol	Used in heart failure, post-MI
Aldosterone Antagonists	Spirolonolactone	Used in resistant hypertension

✓ Combination Therapy Recommended for Stage 2 Hypertension

- Example: ARB/ACEi + CCB or Thiazide Diuretic
- ESC/ESH & ISH recommend starting two drugs if BP \geq 150/90 mmHg

C. Special Considerations in Hypertension Treatment

✓ Resistant Hypertension (BP Uncontrolled on 3 Drugs)

- Add Spirolonolactone, beta-blocker, or centrally acting drugs (Clonidine).
- Check for secondary hypertension (OSA, renal disease).

✓ Hypertension in Diabetics

- Target BP: <130/80 mmHg (AHA) / <140/85 mmHg (ESC)
- Preferred drugs: ACE inhibitors or ARBs (kidney protective).

✓ Hypertension in Pregnancy

- Safe Drugs: Labetalol, Methyldopa, Nifedipine
- Avoid: ACE inhibitors & ARBs (teratogenic).

✓ Hypertensive Crisis (BP > 180/120 mmHg)

- Without organ damage: Gradual reduction with oral meds (Amlodipine, Labetalol).



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- With organ damage (Emergency): IV therapy (Nitroprusside, Labetalol).

3. Blood Pressure Targets (As per Guidelines)

Patient Group	BP Target (mmHg) (ACC/AHA)	BP Target (ESC/ESH, WHO)
General Population (<65 years)	<130/80	<140/90
Elderly (>65 years)	<130/80 (if tolerated)	<140/90
Diabetics	<130/80	<140/85
Chronic Kidney Disease (CKD)	<130/80	<140/90
Heart Failure/Post-MI	<130/80	<140/90

✓ WHO & ESC/ESH are slightly more lenient in BP targets than ACC/AHA.

4. Comparison of Major Guidelines

Guideline	BP Threshold for Treatment	Target BP	First-Line Drugs
ACC/AHA (USA, 2017)	$\geq 130/80$ (if high risk) or $\geq 140/90$	<130/80	ACEi/ARB, CCB, Diuretics
ESC/ESH (Europe, 2018)	$\geq 140/90$	<140/90	ACEi/ARB, CCB, Diuretics
WHO (2021)	$\geq 140/90$	<140/90	ACEi/ARB, Diuretics, CCB



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Guideline	BP Threshold for Treatment	Target BP	First-Line Drugs
ISH (2020, Global)	$\geq 140/90$	$< 140/90$	CCB, Diuretics, ACEi/ARB

- ✓ American guidelines are more aggressive (lower BP targets & early treatment initiation).
 - ✓ European & WHO guidelines are slightly more conservative but align with global practice.
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Conclusion

- ✓ Hypertension management is based on international norms from ACC/AHA, ESC/ESH, WHO, & ISH.
- ✓ Lifestyle changes are the foundation of treatment, with drug therapy tailored based on risk factors & comorbidities.
- ✓ Combination therapy is preferred for Stage 2 HTN, and BP targets are more aggressive in high-risk patients.