

Hypertension Diagnosis

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- Hypertension is the “silent killer,” an asymptomatic chronic disorder that, undetected and untreated, silently damages the blood vessels, heart, brain, and kidneys.

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- patients' quality of life rating often improves with successful drug treatment of hypertension.

Hypertension control can improve exertional dyspnea caused by diastolic dysfunction, nocturia caused by resetting of pressure natriuresis, and possibly even erectile dysfunction caused by endothelial dysfunction.

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- The initial evaluation for hypertension should accomplish three goals: (1) the accurate measurement of BP; (2) the assessment of the patient's global cardiovascular disease (CVD) risk; and (3) the detection of secondary (i.e., identifiable and potentially curable) forms of hypertension.

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- There are now four approaches to BP measurement: (1) conventional office BP, (2) automated office BP, (3) home monitoring, and (4) ambulatory BP monitoring.

Conventional Auscultatory Office Blood Pressure

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- Auscultatory measurement of BP by medical personnel is the conventional approach to the diagnosis of hypertension in the United States and the method used

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- stages office BP by the average of two or more readings taken at two or more office visits

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- The BP should be measured at least twice after 5 minutes of rest, with the patient seated in a chair, the back supported, and the arm bare and at heart level. A large adult-sized cuff should be used to measure BP in overweight adults, because the standard sized cuff can spuriously elevate readings.

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- tobacco and caffeine should be avoided for at least 30 minutes. BP should be measured in both arms and after 5 minutes of standing, the latter to exclude a significant postural fall in BP, particularly in older persons and in those with diabetes or other conditions (e.g., Parkinson disease) that predispose to autonomic insufficiency.

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- In practice, conventional office-based readings often are inaccurate because of too common measurement errors, the small number of readings, the “white coat” (alerting) reaction, and the large number of factors that influence BP outside the medical office

Automated Office Blood Pressure (AOBP)

- An oscillometric monitor was set to take three readings at 1-minute intervals after the patient was unattended by medical staff and unaccompanied by family members in the examination room for 5 minutes. Other protocols take five readings at 1-minute intervals (or on STAT mode) and average all five readings or the last three readings

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- AOBP as the preferred method over conventional office BP because it (1) minimizes the white coat reaction, (2) correlates better with home or awake ambulatory BP, and (3) eliminates digit preference. On average, AOBP is 15/10 mmHg lower than conventional office BP, but there are large interindividual differences. Hypertension is diagnosed when the AOBP is 135/85 mm Hg or higher.

Home Blood Pressure Monitoring (HBPM).

- Office BP can both overestimate and underestimate a person's BP measured at home. HBPM improves medication adherence by actively involving patients in their own medical care.

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- rest quietly for 5 minutes in the seated position with the back supported and the arm supported on a table at heart level; take two readings in the morning and two readings in the evening for at least 3 consecutive days (preferably 7 days).

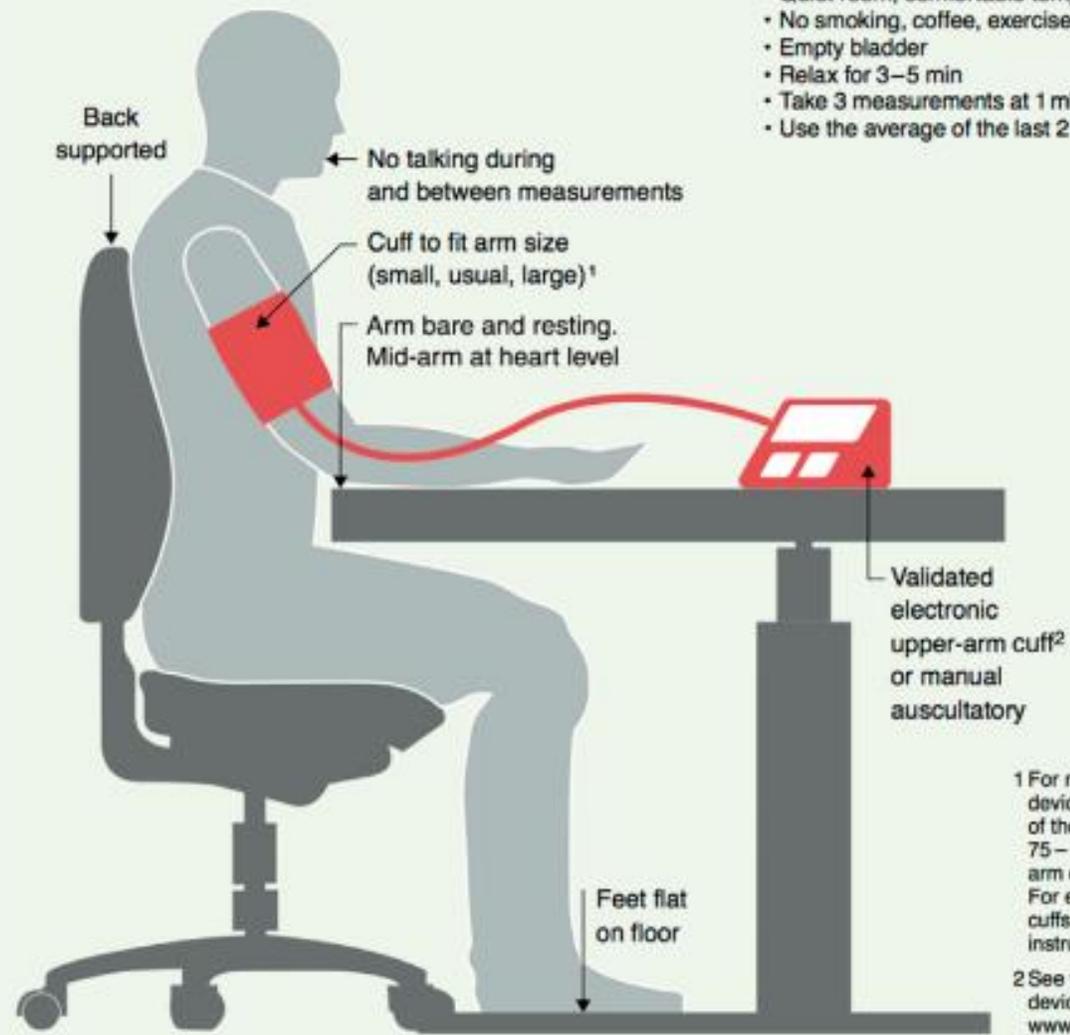
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- The first day's readings should be discarded as being falsely elevated, and all other readings be averaged to make clinical decisions. Hypertension is diagnosed when the average home BP is 135/85 mm Hg or higher. Each patient's monitor needs to be checked in the office for accuracy and cuff size.

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- Wrist monitors are inaccurate and not recommended. The oscillometric method may not work well in patients with atrial fibrillation or frequent extra systoles. Some patients become obsessive about taking their BP and must be advised to stop self-measurement altogether.

Ambulatory Blood Pressure Monitoring

- Ambulatory BP monitoring (ABPM) is the “gold standard”: it provides automated measurements of BP during a 24-hour or (better) a 48-hour period while patients are engaged in their usual activities, including sleep. Prospective studies show that ABPM predicts fatal and nonfatal MI and stroke better than standard office measurement does

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- At least two measurements per hour should be taken during the patient's waking hours, and the average value of at least 14 measurements during that time confirms the diagnosis of hypertension.



- Quiet room, comfortable temperature
- No smoking, coffee, exercise for 30min
- Empty bladder
- Relax for 3–5 min
- Take 3 measurements at 1 min intervals
- Use the average of the last 2 measurements

1 For manual auscultatory devices the inflatable bladder of the cuff must cover 75–100 % of the individual's arm circumference. For electronic devices use cuffs according to device instructions.

2 See validated electronic devices lists at www.stridebp.org

TABLE 26.1 Guidelines Comparison: US and European

GUIDELINE DIFFERENCES	AMERICAN COLLEGE OF CARDIOLOGY/AMERICAN HEART ASSOCIATION (ACC/AHA)		EUROPEAN SOCIETY OF CARDIOLOGY/EUROPEAN SOCIETY OF HYPERTENSION (ESC/ESH)	
	Systolic and/or Diastolic (mm Hg)		Systolic and/or Diastolic (mm Hg)	
Level of Blood Pressure (BP) Defining Hypertension				
Office/clinic BP	≥130	≥80	≥140	≥90
Daytime mean	≥130	≥80	≥135	≥85
Nighttime mean	≥110	≥65	≥120	≥70
24-hr mean	≥125	≥75	≥130	≥80
Home BP mean	≥130	≥80	≥135	≥85
BP targets for treatment	<130/80		Systolic targets	<140 and close to 130
Initial combination therapy	Initial single-pill combination therapy		Initial single-pill combination in patients >20/10 mm Hg above BP goal therapy in patients ≥ 140/90 mm Hg	
Hypertensive requiring	>130/80 mm Hg		≥140/90 mm Hg intervention	

TABLE 1. Classification of office BP and definitions of hypertension grades

Category	Systolic (mmHg)		Diastolic (mmHg)
Optimal	<120	and	<80
Normal	120–129	and	80–84
High-normal	130–139	and/or	85–89
Grade 1 hypertension	140–159	and/or	90–99
Grade 2 hypertension	160–179	and/or	100–109
Grade 3 hypertension	≥180	and/or	≥110
Isolated systolic hypertension [†]	≥140	and	<90
Isolated diastolic hypertension [†]	<140	and	≥90

The BP category is defined by the highest level of BP, whether systolic or diastolic.

[†]Isolated systolic or diastolic hypertension is graded 1, 2 or 3 according to SBP and DBP values in the ranges indicated. The same classification is used for adolescents ≥16 years old

Stage 1: Uncomplicated hypertension (i.e. without HMOD or established CVD, including CKD stage 1 and 2).
Stage 2: Presence of HMOD or CKD grade 3 or diabetes.
Stage 3: Established CVD or CKD stages 4 or 5.

Thanks...