

# A quick reference guide for hypertension

<b>Definition</b>	Blood pressure sustained above 140/90 after repeated measurement
<b>Classification</b>	<ul style="list-style-type: none"><li>• hypertension with no risk factors and no organ damage</li><li>• hypertension with risk factors alone</li><li>• hypertension with organ damage</li><li>• hypertension with risk factors and organ damage</li></ul>
<b>Measurement of blood pressure</b>	Sitting or supine, repeated twice after 3 minutes if initially $\geq 140/90$ Note. Observers require training.
<b>High risk groups</b>	<ul style="list-style-type: none"><li>• smokers</li><li>• diabetes mellitus</li><li>• elderly</li><li>• hyperlipidaemia</li><li>• previous myocardial infarction</li><li>• evidence of organ damage</li><li>• family history</li></ul>
<b>Minimum data set for clinical assessment of hypertension</b>	<p><i>History</i></p> <ul style="list-style-type: none"><li>• presenting complaints and duration</li><li>• previous history of myocardial infarction, stroke, diabetes, renal disease and peripheral vascular disease</li><li>• family history of hypertension, myocardial infarction, stroke, diabetes and peripheral vascular disease</li><li>• drug history, e.g. use of non-steroidal anti-inflammatory drugs, oral contraceptives, corticosteroids</li><li>• previous therapies/previous adverse reactions to drugs</li><li>• risk behaviour, such as smoking</li></ul> <p><i>Physical examination</i></p> <ul style="list-style-type: none"><li>• to look for signs of secondary hypertension such as:<ul style="list-style-type: none"><li>– Cushing syndrome yes/no</li><li>– polycystic kidney yes/no</li><li>– renal artery stenosis yes/no</li><li>– phaeochromocytoma yes/no</li><li>– coarctation yes/no</li></ul></li><li>• to look for signs of organ damage such as:<ul style="list-style-type: none"><li>– left ventricular hypertrophy and failure (displaced apical impulse, gallop, rales) yes/no</li><li>– retinal changes yes/no, if yes specify</li><li>– peripheral pulses reduced yes/no</li><li>– peripheral pulses synchronous yes/no</li><li>– cerebrovascular disease yes/no</li></ul></li></ul>

*Laboratory tests*

- urine analysis
- blood glucose
- ECG (SV<sub>1</sub>+RV<sub>5</sub> or RV<sub>6</sub>)
- serum creatinine or blood urea nitrogen
- haematocrit
- serum potassium and sodium
- serum cholesterol

**Target blood pressure** To achieve the maximum tolerated reduction in blood pressure  $\leq 140/90$

**Management**

*Nonpharmacological*

- reduce fat intake
- reduce salt (do not add)
- take regular dynamic exercise (e.g. walking)
- reduce weight (if obese)
- reduce alcohol
- avoid tobacco

*Pharmacological*

- diuretic or  $\beta$ -blockers as first line unless contraindicated
- ACE inhibitors especially in diabetes with incipient nephropathy
- calcium channel blockers,  $\alpha$ -blockers
- others

Note. The choice of drug is influenced by associated disease, risk factors or organ damage.

**Education**

*Public*

- raising awareness
- change in attitudes and lifestyle

*People with hypertension*

- compliance with regimen

Note. Adequate time should be given to each patient during consultation

*Doctors and nurses (including continuing education)*

- blood pressure measurement
- levels of hypertension to treat

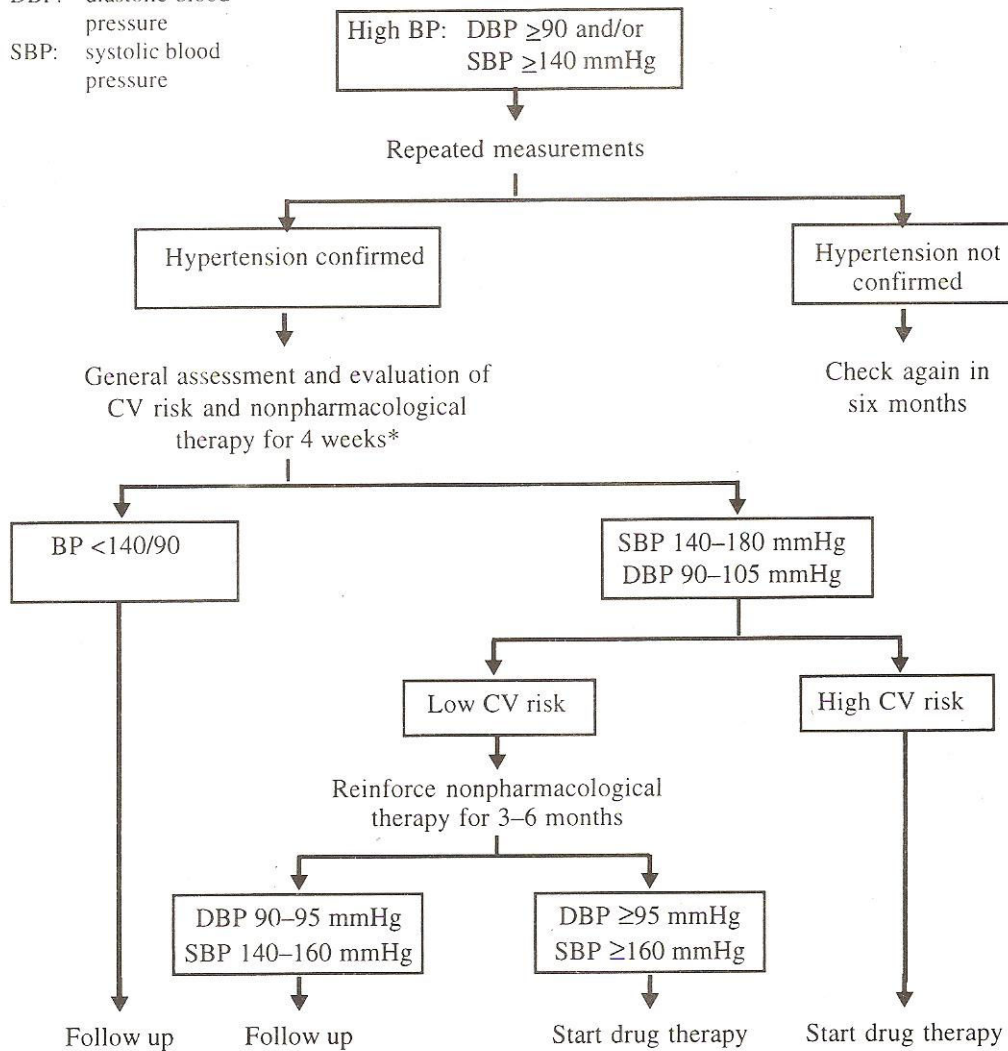
**Indicators (audit)**

- %  $\geq 140/90$  on treatment,  $\geq 160/100$ ,  $\geq 180/110$ ,  $\geq 200/120$
- % with complete data set
- % team trained in blood pressure measurement
- % lost to follow up
- % with complete medical records

## A simplified scheme for management of hypertension

### Key

BP: blood pressure  
 CV: cardiovascular  
 DBP: diastolic blood pressure  
 SBP: systolic blood pressure



**Important.** Patients with diastolic pressures of 105 mmHg or over and/or systolic pressures of 180 mmHg or over should be referred for immediate evaluation. Drug therapy should not be delayed in patients with target organ damage or those with high risk.

\* The period of 4 weeks can be extended if a significant response is shown.

### Guidelines for selecting first-line drugs for hypertension

Class of drug	Condition/indications	Contraindications	Caution/limited value
Diuretics	Heart failure Elderly patients Systolic hypertension Black patients	Gout	Diabetes Hyperlipidaemia Pregnancy <sup>a</sup> Sexually active males
$\beta$ -Blockers	Angina After myocardial infarct Tachyarrhythmias Pregnancy	Asthma and chronic obstructive pulmonary disease Peripheral vascular disease Heart block <sup>b</sup>	Hypertriglyceridaemia Insulin-dependent diabetes mellitus Heart failure Athletes and physically active patients Black patients
ACE inhibitors	Heart failure Left ventricular hypertrophy After myocardial infarct Diabetes with micro-albuminuria	Pregnancy Bilateral renal artery stenosis	Black patients
Calcium antagonists	Angina Peripheral vascular disease Elderly patients Systolic hypertension Glucose intolerance Black patients	Pregnancy	Congestive heart failure <sup>c</sup> Atrioventricular heart block <sup>d</sup>
$\alpha$ -Blockers	Prostatic hypertrophy Glucose intolerance		Orthostatic hypotension

<sup>a</sup> Because of reduced plasma volume.

<sup>b</sup> Grade II and III atrioventricular block.

<sup>c</sup> Verapamil should be avoided or used only with great caution.

<sup>d</sup> Verapamil and diltiazem should be avoided or used only with great caution.