Introduction to the British Hypertension Society IV Guidelines

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Concern in the United Kingdom

- Substantial underdiagnosis, undertreatment, and poor rates of blood pressure control in the United Kingdom
- Total risk assessment and multifactorial interventions for cardiovascular disease

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Targets of the Guidelines

- General practitioners
- Practice nurses
- Generalists in hospital practice

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Objectives of the Guidelines

- Primary prevention of hypertension and cardiovascular disease
- The detection and treatment of undiagnosed hypertension
- Control rate in treated hypertensives
- Non-pharmacological measures, statin, and aspirin
- Mild hypertension at high risk of cardiovascular disease
- Adherence to drug treatment

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Stakeholders Who Reviewed the Guidelines

- Blood Pressure Association
- Nurses' Hypertension Association
- Diabetes UK
- British Cardiac Association
- Renal Association
- Heart UK
- Primary Care Cardiovascular Society
- London Hypertension Society
- British Heart Foundation
- Royal College of General Practitioners
- Friends of the British Hypertension Society
- Department of Health

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Classification of BP levels of the British Hypertension Society

Category	Systolic	Diastolic
Blood pressure		
Optimal	< 120	< 80
Normal	120 – 129	80 – 84
High normal	130 – 139	85 – 89
Hypertension		
Grade 1 hypertension (mild)	140 – 159	90 – 99
Grade 2 hypertension (moderate)	160 – 179	100 – 109
Grade 3 hypertension (severe)	≥180	≥110
Isolate systolic hypertension		
Grade 1	140-159	< 90
Grade 2	≥160	< 90

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Box 1: Blood pressure measurement by standard mercury sphygmomanometer or semiautomated device

- Use a properly maintained, calibrated, and validated device
- Measure sitting blood pressure routinely: standing blood pressure should be recorded at least at the initial estimation in elderly or diabetic patients
- Remove tight clothing, support arm at heart level, ensure arm relaxed and avoid talking during the measurement procedure
- Use cuff of appropriate size (see box 3 in the full guidelines,3 www.bhsoc.org)
- Lower mercury column slowly (2 mm per second)
- Read blood pressure to the nearest 2 mm Hg
- Measure diastolic blood pressure as disappearance of sounds (phase V)
- Take the mean of at least two readings, more recordings are needed if marked differences between initial measurements are found
- Do not treat on the basis of an isolated reading

Box 2: Potential indications for the use of ambulatory blood pressure monitoring

- Unusual variability of blood pressure
- Possible white coat hypertension
- Informing equivocal treatment decisions
- Evaluation of nocturnal hypertension
- Evaluation of drug resistant hypertension
- Determining the efficacy of drug treatment over 24 hours
- Diagnosis and treatment of hypertension in pregnancy
- Evaluation of symptomatic hypotension

Box 3: Routine investigations

- Urine strip test for protein and blood
- Serum creatinine and electrolytes
- Blood glucose—ideally fasted
- Blood lipid profile (at least total and high density lipoprotein (HDL) cholesterol)—ideally fasted for consideration of triglycerides
- Electrocardiogram

Box 4: Evaluation of hypertensive patients Causes of hypertension

- Drugs (non-steroidal anti-inflammatory drugs, oral contraceptives, steroids, liquorice, sympathomimetics, some cold cures)
- Renal disease (present, past, or family history, proteinuria or haematuria: palpable kidney(s)—polycystic, hydronephrosis, or neoplasm)
- Renovascular disease (abdominal or loin bruit)
- Phaeochromocytoma (paroxysmal symptoms)
- Conn's syndrome (tetany, muscle weakness, polyuria, hypokalaemia)
- Coarctation (radio-femoral delay or weak femoral pulses).
- Cushing's (general appearance)

Box 4: Evaluation of hypertensive patients Contributory factors

- Overweight
- Excess alcohol (> 3 units/day for men; > 2 units/day for women)
- Excess salt intake
- Lack of exercise
- Environmental stress

Box 4: Evaluation of hypertensive patients

Complications of hypertension or target organ damage

- Brain: stroke, transient ischaemic attack, dementia, carotid bruits
- Heart: left ventricular hypertrophy or left ventricular strain on electrocardiogram; heart failure; myocardial infarct, angina, CABG, or PCI
- Arteries: peripheral vascular disease
- Eyes: fundal haemorrhages or exudates, papillodoema
- Kidney: proteinuria; renal impairment (raised serum creatinine)

Box 4: Evaluation of hypertensive patients
Risk factors for cardiovascular disease

- Smoking
- Diabetes
- Ratio of total cholesterol: HDL cholesterol
- Family history
- Age
- Sex

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Box 5: Suggested indications for specialist referral

- Urgent treatment needed
  - Accelerated hypertension (severe hypertension and grade III-IV retinopathy)
  - Particularly severe hypertension (> 220/120 mm Hg)
  - Impending complications (for example, transient ischaemic attack, left ventricular failure)

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Box 5: Suggested indications for specialist referral

- Possible underlying cause
  - Any clue in history or examination of a secondary cause, such as hypokalaemia with increased or high normal plasma sodium (Conn's syndrome)
  - Elevated serum creatinine
  - Proteinuria or haematuria
  - Sudden onset or worsening of hypertension
  - Resistant to multidrug regimen (3 drugs)
  - Young age (any hypertension < 20 years; needing treatment < 30 years)

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Box 5: Suggested indications for specialist referral

- Therapeutic problems
  - Multiple drug intolerance
  - Multiple drug contraindications
  - Persistent non-adherence or non-compliance

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Box 5: Suggested indications for specialist referral

- Special situations
  - Unusual blood pressure variability
  - Possible white coat hypertension
  - Hypertension in pregnancy

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Box 6: Thresholds and treatment targets for antihypertensive drug treatment

- Thresholds of drug treatment
  - Sustained blood pressures 160/100 mmHg despite non-pharmacological measures
  - Sustained SBP 140-159 mm Hg or DBP 90-99 mm Hg in the presence of:
    - target organ damage
    - established cardiovascular disease
    - diabetes
    - 10 year CVD risk of 20%
  - ABPM and home BP: 10/5 mm Hg lower

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Box 6: Thresholds and treatment targets for antihypertensive drug treatment

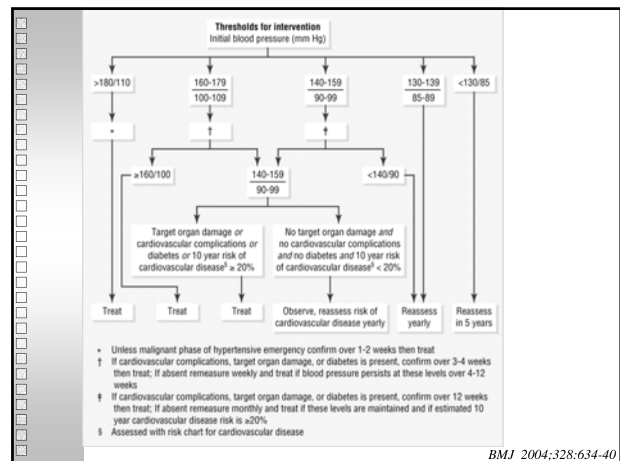
- Treatment targets:
  - 140/85 mm Hg
  - 130/80 mm Hg
    - for patients with diabetes, renal impairment or established cardiovascular disease
  - ABPM and home BP: 10/5 mm Hg lower

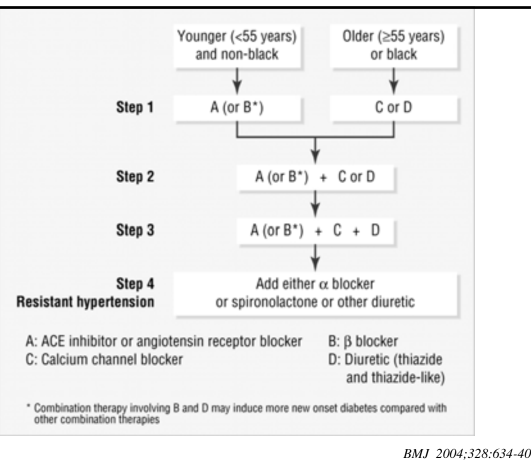
Box 7: Lifestyle Measures

- Maintain normal weight for adults
  - (body mass index 20-25 kg/m2)
- Reduce salt intake to < 100 mmol/day
  - (< 6g NaCl or <2.4 g Na+/day)
- Limit alcohol consumption
  - to 3 units/day for men and 2 units/day for women
- Engage in regular aerobic physical exercise
  - for 30 minutes per day
- Consume at least five portions/day of fresh fruit and vegetables
- Reduce the intake of total and saturated fat

Box 8: Other medications for hypertensive patients

- Primary prevention
  - Aspirin: use 75 mg daily if patient is aged 50 years with blood pressure controlled to < 150/90 mm Hg and
    - target organ damage
    - diabetes mellitus
    - 10 year risk of cardiovascular disease of 20%
  - Statin: use sufficient doses to reach targets if patient is aged up to at least 80 years, with a 10 year risk of cardiovascular disease of 20% and with total cholesterol concentration 3.5mmol/l
  - Vitamins—no benefit shown, do not prescribe





Box 8: Other medications for hypertensive patients

- Secondary prevention (including patients with type 2 diabetes)
  - Aspirin: use for all patients unless contraindicated
  - Statin: use sufficient doses to reach targets if patient is aged up to at least 80 years with a total cholesterol concentration 3.5 mmol/l
  - Vitamins—no benefit shown, do not prescribe

Summary points

- Lifestyle modifications
- Thresholds of drug treatment:
  - sustained SBP 160 mm Hg or DBP 100 mm Hg
- Thresholds of drug treatment:
  - sustained SBP 140-159 mm Hg or DBP 90-99 mm Hg, if cardiovascular disease or other target organ damage present, or if estimated 10 year risk of cardiovascular disease is 20%

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Summary points

- Treatment targets: non-DM, SBP< 140 mm Hg and DBP < 85 mm Hg. Audit standard: < 150/ < 90 mm Hg
- Thresholds of drug treatment: DM patients, SBP 140 mm Hg or DBP 90 mm Hg
- Treatment targets: SBP< 130 mm Hg and DBP< 80 mm Hg. Audit standard < 140/ < 80 mm for hypertensive people with diabetes, chronic renal disease, or established CVD

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Summary points

- Drug combinations and fixed drug combinations
- Low dose aspirin (75 mg/day)
- Statins

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