Hypertension in adults; diagnosis and treatment (from NICE Guidelines 136)

NHS South Yorkshire Integrated Care Board

Offer lifestyle advice and continue to offer it periodically

Clinic BP

Under 140/90 mmHg

Check BP at least every 5 years and more often if close to 140/90 mmHg

140/90 to 179/119 mmHg

- Offer ABPM (or HBPM if ABPM is declined/not tolerated)
- Assess cardiovascular risk (QRisk3)
- Assess for end organ damage

End Organ Damage assessment:
ECG, urine dipstick for blood/ACR
Bloods – U+E, eGFR, lipids, HbA1C

180/120 mmHg or more

Assess for target organ damage ASAP

- **Consider starting drug treatment immediately** without ABPM / HBPM or target organ damage results
- Repeat clinic BP in 7 days

Refer for same-day specialist review if:

- **Retinal haemorrhage or papilledema (accelerated hypertension) or**
- **Life-changing symptoms or**
- **Suspected pheochromocytoma**

ABPM or HBPM

Use clinical judgement for people with frailty or multimorbidity

Under 135/85 mmHg

- Check BP at least every 5 years more often if clinic BP close to 140/90 mmHg

135/85 to 149/94 mmHg (Stage 1)

Offer lifestyle advice.
In addition, for the following groups:
Age >80 with clinic BP > 150/90 :
-consider drug treatment
Age <80 with target organ damage /CVD/renal disease/ diabetes/ 10 year CVD risk ≥10%
-Discuss starting drug treatment

Age <60 with 10year CVD risk <10%
- Consider drug treatment

Age <40:
-Consider specialist evaluation of secondary causes and assessment long-term benefits and risk of treatment

Discuss the person's CVD risk and preferences for treatment, including no treatment.
See NICE patient decision aid for hypertension
See next page for choice for drug monitoring and BP targets

150 / 95 mmHg or more (Stage 2)

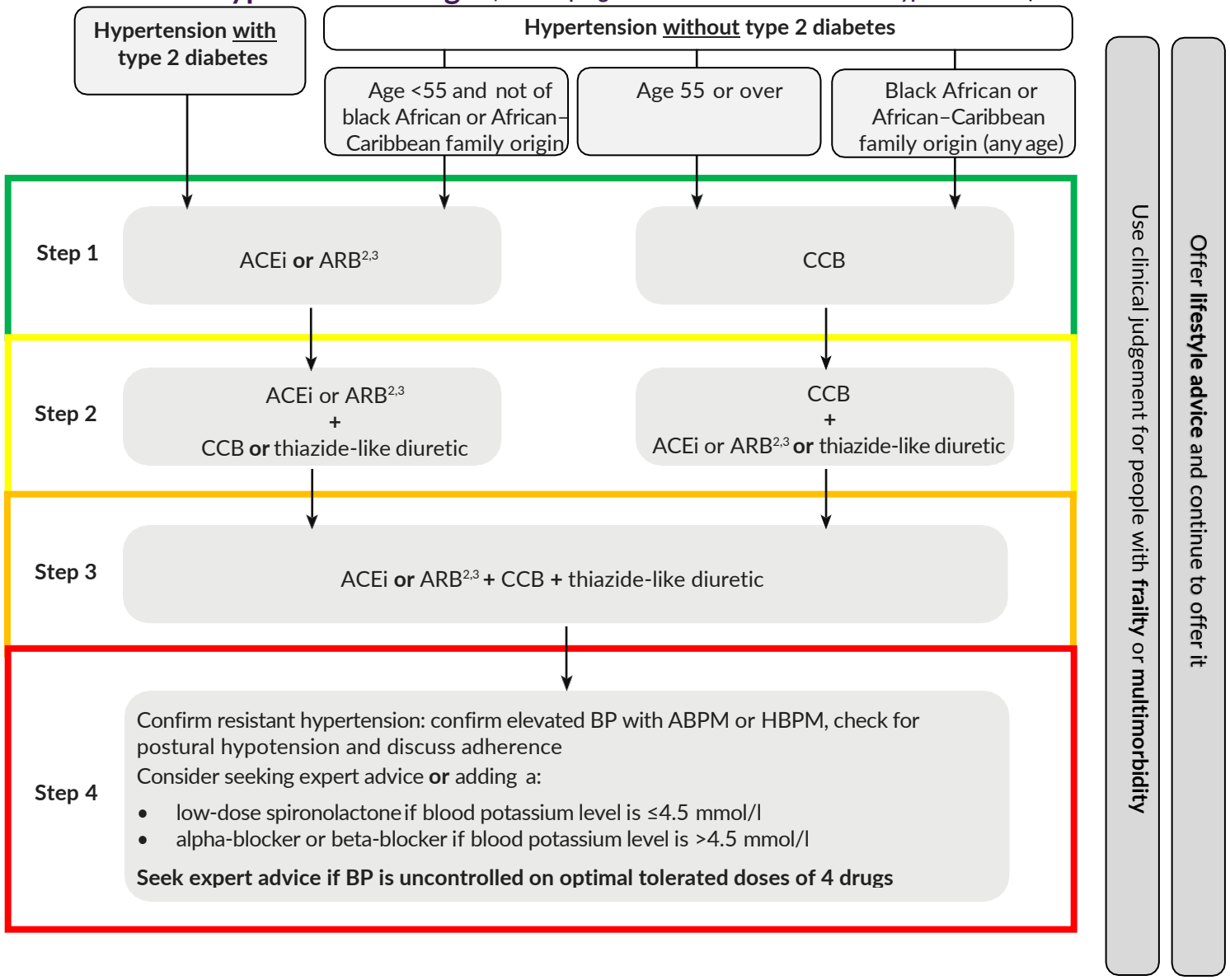
Offer Lifestyle advice and drug treatment
Age <40
-Consider specialist evaluation of secondary causes and assessment long-term benefits and risks of

- Offer annual review
- Support adherence to treatment

Abbreviations: ABPM, ambulatory blood pressure monitoring; BP, blood pressure; CVD, cardiovascular disease; HBPM, home blood pressure monitoring.

This is a summary of the recommendations on diagnosis and treatment from NICE's guideline on hypertension in adults. See the original guidance at www.nice.org.uk/guidance/NG136

Choice of antihypertensive drugs[1] (for non-pregnant women and adults without type 1 diabetes)



[1] For women considering pregnancy or who are pregnant or breastfeeding, see NICE's guideline on hypertension in pregnancy. For people with chronic kidney disease, see NICE's guideline on chronic kidney disease. For people with heart failure, see NICE's guideline on chronic heart failure

[2] See MHRA drug safety updates on ACE inhibitors and angiotensin-II receptor antagonists: not for use in pregnancy, which states 'Use in women who are planning pregnancy should be avoided unless absolutely necessary, in which case the potential risks and benefits should be discussed', ACE inhibitors and angiotensin II receptor antagonists: use during breastfeeding and clarification: ACE inhibitors and angiotensin II receptor antagonists. See also NICE's guideline on hypertension in pregnancy.

[3] Consider an ARB, in preference to an ACE inhibitor in adults of African and Caribbean family origin.

Formulary Choices for Drug Therapy

ACEi - Lisinopril 10mg od (max. 80mg od) OR

Ramipril 1.25mg - 2.5mg od (max 10mg od)

ARB - Losartan 50mg od (max 100mg od)

CCB – Amlodipine 5mg od (max 10mg od). Lercanidipine if ankle odema with Amlodipine

Thiazide –like diuretic – Indapamide 2.5mg od (first line choice) or Bendroflumethazide 2.5mg od

Step 4 – Spironolactone 25mg od (unlicensed) if potassium ≤4.5 mmol/l
Alpha blocker Doxazosin 1mg od (max 16mg od) standard tablets or beta blocker Atenolol or Bisoprolol if potassium > 4.5mmol/l

Monitoring treatment

Use clinic BP to monitor treatment.

Measure standing and sitting BP in people with:

- type 2 diabetes **or**
- symptoms of postural hypotension **or**
- aged 80 and over.

Advise people who want to self-monitor to use HBPM. Provide training and advice.

Consider ABPM or HBPM, in addition to clinic BP, for people with white-coat effect or masked hypertension.

BP targets

Reduce and maintain BP to the following targets:

Age <80 years:

- Clinic BP <140/90 mmHg
- ABPM/HBPM <135/85 mmHg

Age ≥80 years:

- Clinic BP <150/90 mmHg
- ABPM/HBPM <145/85 mmHg

Postural hypotension:

- Base target on standing BP

Frailty or multimorbidity:

- Use clinical judgement

Abbreviations: ABPM, ambulatory blood pressure monitoring; ACEi, ACE inhibitor; ARB, angiotensin-II receptor blocker; BP, blood pressure; CCB, calcium-channel blocker; HBPM, home blood pressure monitoring.

Adapted from NICE Hypertension in adults: diagnosis and treatment summary August 2019, Approved by Barnsley Area Prescribing Committee 12th October 2022, Review due October 2025

Prescribing notes (From NICE Guideline 136)

Step 1

If an **ACE inhibitor is not tolerated**, for example because of cough, offer an ARB to treat hypertension.

Do **not combine** an ACE inhibitor with an ARB

If a **CCB is not tolerated**, for example because of oedema, offer a thiazide-like diuretic

If there is evidence **of heart failure**, offer a thiazide-like diuretic and follow NICE's guideline on chronic heart failure.

If **starting or changing diuretic treatment for hypertension**, offer a thiazide-like diuretic, such as indapamide in preference to a conventional thiazide diuretic such as bendroflumethiazide or hydrochlorothiazide.

For adults with hypertension already having treatment with bendroflumethiazide or hydrochlorothiazide, who have stable, well-controlled blood pressure, continue with their current treatment.

Step 2

Before considering next step treatment for hypertension discuss **compliance** and support **adherence** (NICE's guideline on medicines adherence).

If hypertension is not controlled in adults of black African or African–Caribbean family origin who do not have type 2 diabetes taking step 1 treatment, consider an ARB, in preference to an ACE inhibitor, in addition to step 1 treatment

Step 3

If hypertension is not controlled in adults taking step 2 treatment, offer a combination of: an ACE inhibitor or ARB and CCB and thiazide-like diuretic

If hypertension is not controlled in adults taking the optimal tolerated doses of an ACE inhibitor or an ARB plus a CCB and a thiazide-like diuretic, regard them as having **resistant hypertension.**

For people with **confirmed resistant hypertension,** consider adding a fourth antihypertensive drug as step 4 treatment or seeking **specialist advice**.

When using further diuretic therapy for step 4 treatment of resistant hypertension, monitor blood sodium and potassium and renal function within 1 month of starting treatment and repeat as needed thereafter

If blood pressure remains uncontrolled in people with resistant hypertension taking the optimal tolerated doses of 4 drugs, seek **specialist advice.**

Same-day specialist referral

Refer patients for specialist assessment, carried out on the same day, if they have a clinic blood pressure of 180/120 mmHg and higher with signs of retinal hemorrhage or papilledema (accelerated hypertension), or life-threatening symptoms for example new onset confusion, chest pain, signs of heart failure, or acute kidney injury.

Refer patients for specialist assessment, carried out on the same day, if they have suspected phaeochromocytoma (for example labile or postural hypotension, headache, palpitations, pallor, abdominal pain, or diaphoresis).

Cardiovascular risk assessment

Cardiovascular risk should be estimated and assessed for all patients with confirmed hypertension using clinic blood pressure measurements. In these patients,**Hba1c,U&E and Lipid profile should be measured, tests for the presence of proteinuria, hematuria, and hypertensive retinopathy undertaken, and a 12-lead ECG performed.**

For full guidance on the risk assessment and prevention of cardiovascular disease, see Cardiovascular disease risk assessment and prevention.

Use QRISK3 an updated version of the QRISK2-2017 risk calculator. It considers additional risk factors such as chronic kidney disease (stage 3 or above), migraine, corticosteroid use, systemic lupus erythematosus, atypical antipsychotics use, severe mental illness, erectile dysfunction, and a measure of systolic blood pressure variability.

Blood pressure targets

	Clinic BP (mm Hg)	ABPM/HBPM (mm Hg)
Under 80 years old	below 140/90	below 135/85
Over 80 years old	below 150/90	below 145/85
With known chronic kidney disease (CKD) (ACR) less than 70 mg/mmol	below 140/90	
CKD with ACR of 70 mg/mmol or more	below 130/80	
Established CVD and CKD	below 135/85	

Use the same blood pressure targets for people with and without cardiovascular disease.