Hypertension Guidance for Primary Care:

1. **Traffic light guide to blood pressure management (poster)**
2. **Hypertension (HT) diagnosis with blood pressure (BP) monitoring and management options**
3. **Hypertension drug treatment flowchart**

The purpose of these documents are to guide healthcare professionals in primary care when diagnosing HT, and considering the monitoring and treatment options for patients with normal blood pressure, hypertension and hypertensive emergencies.
The aim is to ensure a consistent approach to this across SEL.

If you suspect a secondary cause of HT or the patient is under 40 years old please refer to local specialist HT or renal (CKD) teams.
For urgent advice: Consultant Connect Cardiology
Referrals via Advice and Guidance: HT clinic (GSTT and UHL), CKD clinic (GSTT), diabetic medicine (GSTT/KCH/UHL/QEH) and pregnancy in HT clinic (GSTT).

If you suspect a hypertensive crisis and/or worrying symptoms then please refer to your local hospital acute medicine specialist (or call 999 in an emergency).

This guidance was developed by the Cardiovascular sub-group of the SEL Integrated Medicines Optimisation Committee with advice from the Clinical Effectiveness Southwark group.

June 2021: A minor update has been made to **step 4** of the drug treatment pathway (page 4). The monitoring requirements for spironolactone in hypertension have been clarified and simplified compared to previous (which were for heart failure patients). A reference link to the "Specialist Pharmacy Services" (SPS) drug monitoring document has also been added for this.

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South East London Integrated Medicines Optimisation Committee (SEL IMOC). A partnership between NHS organisations in South East London: South East London Clinical Commissioning Group (covering the boroughs of Bexley, Bromley, Greenwich, Lambeth, Lewisham and Southwark) and GSTFT/KCH /SLAM/ Oxleas NHS Foundation Trusts and Lewisham & Greenwich NHS Trust

Traffic light Guide to Blood Pressure (BP) Measurement

Systolic Blood Pressure (SBP) *top value* and/or Diastolic Blood Pressure (DBP) *bottom value*	Assessments and Actions

SBP ≥ 180 mmHg and/or DBP ≥ 120mmHg
Hypertensive emergency

→ **Assess for target organ damage** (*urine dip for protein, bloods: U&Es, HbA1c, lipids, check fundi, ECG*) **and start drug treatment if target organ damage**

if no target organ damage and no signs of accelerated HT, life threatening symptoms or phaeochromocytoma: GP review with a repeated clinic BP in 7 days

→ **Urgent same day review** by HOSPITAL- refer to acute medicine specialist

Especially if **signs of accelerated hypertension** (papilloedema and/or retinal haemorrhage), **life threatening symptoms** (new onset confusion, chest pain, heart failure signs, acute kidney injury), or **suspected phaeochromocytoma** (labile or postural hypotension, headache, palpitations, pallor or diaphoresis)

SBP ≥ 150 to 179mmHg and/or DBP ≥95 to 119mmHg
Stage 2 hypertension

SBP ≥ 140 to 149mmHg and/or DBP ≥90 to 95mmHg
Stage 1 Hypertension

→ **Offer Ambulatory BP Monitoring (ABPM) or Home BP Monitoring (HBPM)**

Investigate for target organ damage (*see box above*)

Assess Cardiovascular (CV) risk: QRisk3 **score**

→ If ABPM /HBPM confirms high BP (readings above 135/85) **discuss starting drug treatment** (considering co-morbidities, age and CV risk) **and give lifestyle advice** (*see box below*)

If medicines are started, uptitrate the dose if tolerated and review the patient at least monthly until at the target average BP for your patient (Link: SEL *HYPERTENSION drug treatment guidance*)

SBP≥ 130 to 139mmHg and/or DBP ≥ 85 to 89mmHg
High side of normal

→ **Recheck annually**

BP < 130/85mmHg
Normal BP

→ **Recheck in 5 years** if no CV risk factors present
Recheck annually if CV risk factors present

→ **Give lifestyle advice:** What's your heart age? - NHS (www.nhs.uk)

- **Smoking cessation**
- **Alcohol moderation** (<14 units per week; drink free days)
- **Reducing salt intake**
- **Caffeine moderation** (<4 to 5 cups of tea/coffee per day)
- **Diet:** Fruit/vegetables (>5 portions per day), less saturated fats
- **Weight management** (ideal BMI range is 18.5 to 24.9)
- **Physical activity** (20-30 mins/day)
- **Consider hypotension if BP ≤90/60mmHg with symptoms** (eg. dizziness, nausea, weakness, confusion)

References: NICE Hypertension in adults 2019: www.nice.org.uk/guidance/NG136
Hypertension in adults: Quality standard 2015: www.nice.org.uk/guidance/qs28/chapter/quality-statement-2-investigations-for-target-organ-damage
SEL Agreed: April 2021 Review Date: April 2023 (earlier if clinically indicated)

Hypertension (HT) and Blood Pressure (BP) Diagnosis, Monitoring and Treatment in Primary Care For Adults

(for patients with type 1 diabetes see: www.nice.org.uk/guidance/ng17)

If clinic BP < 140/90 mmHg (*consider home BP monitoring HBPM: average of 2 morning and 2 evening readings over 4 to 7 days*):
Assess CVD risk using QRisk (excludes >85 years, existing CVD, CKD (3-5), lipid disorders- high risk)
See **CKS CVD risk assessment & management**

If QRisk <10% over 10 years:
1. Lifestyle advice
2. Review any co-morbidities

https://cks.nice.org.uk/cvd-risk-assessment-and-management#!scenario:1

3. Reassess:
   -every 5 years if BP <130/85
   -annually if SBP ≥130 and/or DBP ≥85

If QRisk ≥10% over 10 years:
1. Lifestyle advice- modify risk factors
2. Consider prescribing a statin

https://cks.nice.org.uk/cvd-risk-assessment-and-management#!scenario:2

3. Recheck annually

For type 2 Diabetes: check BP annually regardless of QRisk

If clinic systolic BP ≥140 to 179mmHg and/or diastolic BP ≥90 to 119mmHg
Confirm diagnosis with Ambulatory Blood Pressure Monitoring (ABPM) or Home Blood Pressure Monitoring (HBPM)

(If HBPM <135/85 assess QRisk)

ABPM/HBPM average ≥135/85mmHg (stage 1)	**ABPM/HBPM average ≥150/95mmHg (stage 2)**

Add to Hypertension Register
Assess CVD risk using QRisk and consider age/co-morbidities

For stage 1:
If age <80 years with target organ damage, CVD, renal disease, Type 2 diabetes or QRisk ≥10%:
Offer lifestyle advice and discuss starting drug treatment

If age <60 years with QRisk <10%:
Offer lifestyle advice and consider drug treatment

If age <40 years:
Consider specialist evaluation of secondary causes and treatment risk: benefit

For stage 2:
BP > 150/95mmHg
Offer lifestyle advice and drug treatment

If age >80 years
Offer lifestyle advice and drug treatment but consider frailty/co-morbidities

If age <40 years
Seek specialist advice for evaluation of secondary causes and treatment options

If clinic systolic BP ≥180mmHg and/or diastolic BP ≥120 mmHg

Urgent same day review by an acute medicine hospital specialist if:

- **accelerated hypertension** (retinal haemorrhage or papilloedema), **or**
- **life-threatening symptoms** (new onset confusion, chest pain, heart failure signs, acute kidney injury), **or**
- **suspected phaeochromocytoma** (labile or postural hypotension, headache, palpitations, pallor or diaphoresis)

GP to assess face to face for target organ damage- NICE recommendations- check ophthalmoscopy, urine dipstick, ECG, bloods

Repeat clinic BP in 7 days if no target organ damage

Consider starting drug treatment immediately without ABPM/HBPM if target organ damage

Blood Pressure Targets
(caution frail/ multimorbidity)
Age < 80 years: Clinic BP ≤140/90 mmHg
- ABPM/HBPM ≤135/85mmHg

Age ≥ 80 years: Clinic BP ≤150/90mmHg
- ABPM/HBPM ≤145/85mmHg

If postural hypotension *(drop of ≥20mmHg SBP when standing from sitting) –review medication and aim for standing BP target*
For each 10mmHg drop in BP, CV risk reduces by 20% but consider hypotension if ≤ 90/60 mmHg

Home BP monitoring tools:
Patient booklet:
http://www.bloodpressureuk.org/media/bpuk/docs/MeasuringBP_webrevised.pdf
Poster:
http://www.bloodpressureuk.org/media/bpuk/docs/CheckingBPathomeA4_web.pdf

START TREATMENT TO LOWER BLOOD PRESSURE consider the risk:benefit of therapy and use clinical judgement for patients with frailty or multimorbidity (*link: SEL HYPERTENSION drug treatment*)
Discuss with patient:
- **Lifestyle advice:** smoking cessation, exercise, weight management, review alcohol intake, diet (reduce saturated fats, increase fruit/vegetables), salt reduction, moderate caffeine intake (4 to 5 cups of tea/coffee per day)- consider social prescribing link workers
- **Consider offering statin therapy** (atorvastatin 20mg) after addressing modifiable risk factors in patients with a QRisk > 10% for primary prevention in line with lipid guidance (*add link*)
- **Baseline blood tests:** renal profile, lipid profile, HbA1c, ACR, LFTs
- **Target organ damage assessments:** within 1 month of HT diagnosis for all patients, pulse checks with BP (AF detection)
- **At least annual review and support adherence to treatment** (monthly reviews at up-titration of medication dosing)

Hypertension Management In Adults: Drug Treatment (excludes patients with type 1 diabetes and patients who are pregnant/breastfeeding)

Patient characteristics dictate initial drug choice to lower blood pressure (BP) after a risk:benefit discussion:

Type 2 Diabetes
(T2DM any age or any family origin)

Age < 55 years
(but not black African/African-Caribbean family origin)

Age ≥ 55 years
(no T2DM)

Black African or African- Caribbean family origin
(any age and no T2DM) *NB. at step 2/3 consider ARB over ACEI as less risk of angioedema side effect*

STEP 1 Prescribe: Angiotensin-converting-enzyme inhibitor (ACEI) (eg. ramipril 2.5mg daily) or **angiotensin II receptor blocker (ARB)** (eg. losartan 50mg daily)*

- **Check baseline renal profile**: If BP remains above target, double dose every 2 -4 weeks
- **Aim for maximum doses** eg. ramipril 10mg daily; losartan 100mg daily, if tolerated and if BP, creatinine and electrolytes allow
- **For each dose titration check:** Creatinine (increase by <20%), renal function (CrCl falls by <15%), and potassium (<5.5mmol)

STEP 1 Prescribe: Calcium channel blocker (CCB) (eg. amlodipine 5mg daily)

- **If BP remains above target**, increase dose after 2-4 weeks to 10mg daily if tolerated.
- **Side effects include** flushing and headaches at initiation; swollen ankles especially at higher doses.
- **For patients with heart failure**: consider a thiazide-like diuretic (eg indapamide 2.5mg daily) step 1

For contra-indications to each drug treatment see BNF and summary of product characteristics SPC

*For diabetic nephropathy: ARBs of choice are irbesartan and losartan, according to trial evidence

Review after dose titration to maximum tolerated dose: Is BP at target? *(Individualised targets may apply eg. frailty, co-morbidities- hypotension if BP ≤90/60mmHg)*

Age <80 years clinic BP ≤140/90mmHg or home BP ≤135/85mmHg; **Age ≥80 years** clinic BP ≤150/90mmHg or home BP ≤145/85mmHg

No

STEP 2 Address adherence issues and, if BP above target, **add in CCB** (eg. amlodipine 5mg daily) or **thiazide-like diuretic** (indapamide 2.5mg daily). Check baseline renal profile and 2 weeks following diuretic initiation.

No

STEP 2 Address adherence issues and, if BP above target, **add in ACEI** or **ARB** (eg. ramipril 2.5mg daily or losartan 50mg daily) or **thiazide-like diuretic** (indapamide 2.5mg daily). **Check baseline renal profile** and recheck after 2 weeks.

Yes

Yes

No

STEP 3 Check adherence issues and, if BP is still above target, add in a third agent: **ACEI or ARB plus CCB plus thiazide-like diuretic** and titrate the dose according to BP, creatinine and electrolytes (For thiazide-like diuretics if serum potassium <3.5mmol/L or CrCl <25µmol/L seek specialist advice)

Review after one month/dose titration to maximum tolerated dose: Is clinic or home BP at target?

Yes

No

Reinforce adherence, **reassess lifestyle** and **review BP every 6 months** (encourage HBPM)
Postural hypotension risk: Review medication if drop of ≥20mmHg SBP when standing from sitting
Annual checks: weight, BMI, home BP technique/check meter is less than 5 years old
-Bloods: renal & lipid profile, HbA1c, ACR, LFTs
Target organ damage investigations: ECG within 1 month of HT diagnosis; NICE guidance

STEP 4 Check adherence issues and, if BP is still above target, and postural hypotension is not a complication, add in a fourth agent (with a referral to hypertension/renal specialist if BP still uncontrolled):
Check potassium level (K+) and

- **If K+≤4.5mmol/L** and good renal function: prescribe **low-dose spironolactone** 25mg each morning (monitor blood sodium, potassium and renal function within 1 month of starting treatment and repeat 6 monthly thereafter (SPS) -ensure K+≤4.5mmol/L and stop therapy if hyperkalaemia- *unlicensed indication and caution in eGFR<30ml/min*
- **if K+>4.5mmol/L** and/or reduced renal function: prescribe **alpha-blocker** (eg. doxazosin 1mg daily starting dose)-*avoid in elderly as orthostatic hypotension risk* **or beta-blocker** (eg. atenolol 25mg or bisoprolol 5mg daily starting doses)