

# Hypertension

## A guide for Southwark General Practice

### Key messages

1. Lifestyle changes are key to reducing CV risk and lowering blood pressure
2. Check for complications and calculate a QRISK 2 or 3 score
3. Aim for NICE blood pressure targets (which are often stricter than QOF)
4. Check blood pressure *more frequently*

Always work within your knowledge and competency

January 2022 (review January 2024, or earlier if indicated)

# Why focus on BP in Southwark?

Hypertension is a risk factor for having worse outcomes from Covid-19.

Treatment of high BP significantly reduces risk of stroke, IHD, heart failure and all cause mortality<sup>1</sup>

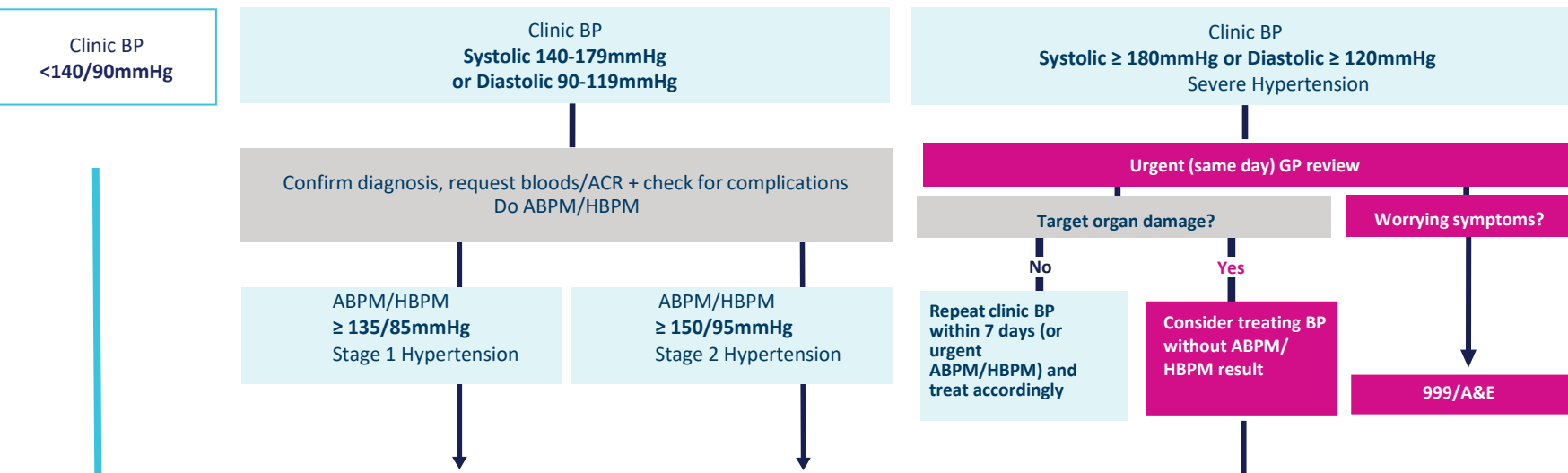
- **Risk reduction:** Every 10mmHg reduction in systolic BP reduces risk of major CV events by 20%<sup>1</sup>
- **Under-treated:** 45% of Southwark patients <80 years, with hypertension, have a BP >140/90mmHg<sup>2</sup>
- **Under-diagnosed:** 27,650 people remain undiagnosed (prevalence = 10.6% vs. expected= 19.2%)<sup>1</sup>

In Southwark, if we reduce the average systolic BP in people with hypertension by 10 mmHg, in one year, we could prevent<sup>1</sup>:

- **67** people from having a stroke
- **47** people from developing heart failure
- **49** people from developing IHD
- **178** deaths

# Hypertension diagnosis and assessment, including for people with Type 2 diabetes (T2DM)

## Confirm hypertension diagnosis (using ABPM/ HBPM) and stratify CV risk<sup>3,4</sup>



Offer lifestyle Advice (see page 5)

## Assess for complications + CV risk (QRISK 2 or 3) (for QRISK 2 or 3 exclusions see page 4)



## QRISK 2 or 3 (to assess 10-year CV risk)



BP every 5 years, or annually if near to 140/90mmHg (use clinical judgement), or if target organ damage/ T2DM (see Traffic light page within SELIMOC hypertension guidance 2021 for primary care)

Review BP (recommended at least annually, or more frequently when clinically indicated) (BP/blood tests/ACR/lifestyle and medication review)

## Hypertension diagnosis: additional information

### Diagnosing hypertension

#### How to measure BP when considering a diagnosis of hypertension:

- Measure blood pressure in both arms, if difference >15 mmHg, repeat measurements
- If difference remains >15 mmHg, measure subsequent blood pressures in the arm with the higher reading (note this on EMIS)

#### When to measure standing + sitting BP?

- In DM, postural hypotension (systolic drop  $\geq 20$ mmHg from sitting to standing), or age  $\geq 80$  yrs
- If significant drop/symptoms of postural hypotension, **review medication and treat to BP target based on standing BP**

#### • Ambulatory BP monitoring (ABPM)

Ensure sufficient readings - minimum 14 readings during waking hours.  
Use daytime average BP for diagnosis

#### • Home BP monitoring (HBPM)

Ensure a validated (and calibrated) BP machine is being used and advise to record two BP readings every morning and evening for at least 4 days (ideally 7)  
In practice, disregard the first day's readings and take an average of the remaining readings

### Assessing complications

**Look for complications** (target organ damage – i.e. fundoscopy, urine dip, CV exam) + do a **QRISK 2 or 3**

- **Tests:** renal profile, lipids, FBC, HbA1c, TFT, ACR, urinalysis for haematuria + ECG + fundoscopy
- **Record:** smoking status, physical activity level, alcohol intake, BMI, [waist circumference], family history [use Arden's BP EMIS Template]

### Assessing Cardiovascular (CV) risk: QRISK

- As of December 2021, the QRISK2 'calculator' is integrated into EMIS, this may change (responsibility for this lies with EMIS or Ardens), and QRISK 3 calculators can be found online [here](#)
- The calculated CV risk is an estimate. Clinical judgement is required to adjust for factors that the risk calculator does not take into account

### QRISK 2 exclusions

- QRISK2 is not applicable to patients in the following groups: Type 1DM, CKD (eGFR<60 and /or albuminuria), existing CVD/previous Stroke/TIA, familial hypercholesterolaemia and people >85 years
- For several conditions, QRISK2 will underestimate people's risk e.g., severe mental illness and some rheumatological conditions (which are taken into account in QRISK3)

### When to refer a patient?

#### Suspect secondary causes OR patient <40 years?

- If you suspect **secondary causes in a patient of any age** e.g. Cushing's, Conn's\*
- **If <40 years + BP  $\geq 140/90$ mmHg + no evidence of CVD, renal/hypertensive eye disease or diabetes.** The 10-year QRisk can underestimate the lifetime risk of CV events in this cohort.<sup>3</sup>
- In patients of **African or Caribbean family origin, primary hypertension can present earlier, if in doubt, consider A&G** to discuss need for referral

Refer to specialist clinic for investigation

#### Worrying symptoms?

- **Life-threatening symptoms** - new onset confusion, chest pain, HF, AKI
- **Accelerated hypertension** - retinal haemorrhage, papilloedema
- **Suspected pheochromocytoma** - labile or hypotension, headache, pallor, palpitations, abdo pain, excessive sweating<sup>17</sup>

Immediate: 999 or A&E

\*Other conditions which can cause hypertension include: Connective tissue disorders: scleroderma, systemic lupus, erythematosus, polyarteritis nodosa, retroperitoneal fibrosis, obstructive sleep apnoea

## Impact of life-style changes on BP<sup>6</sup>

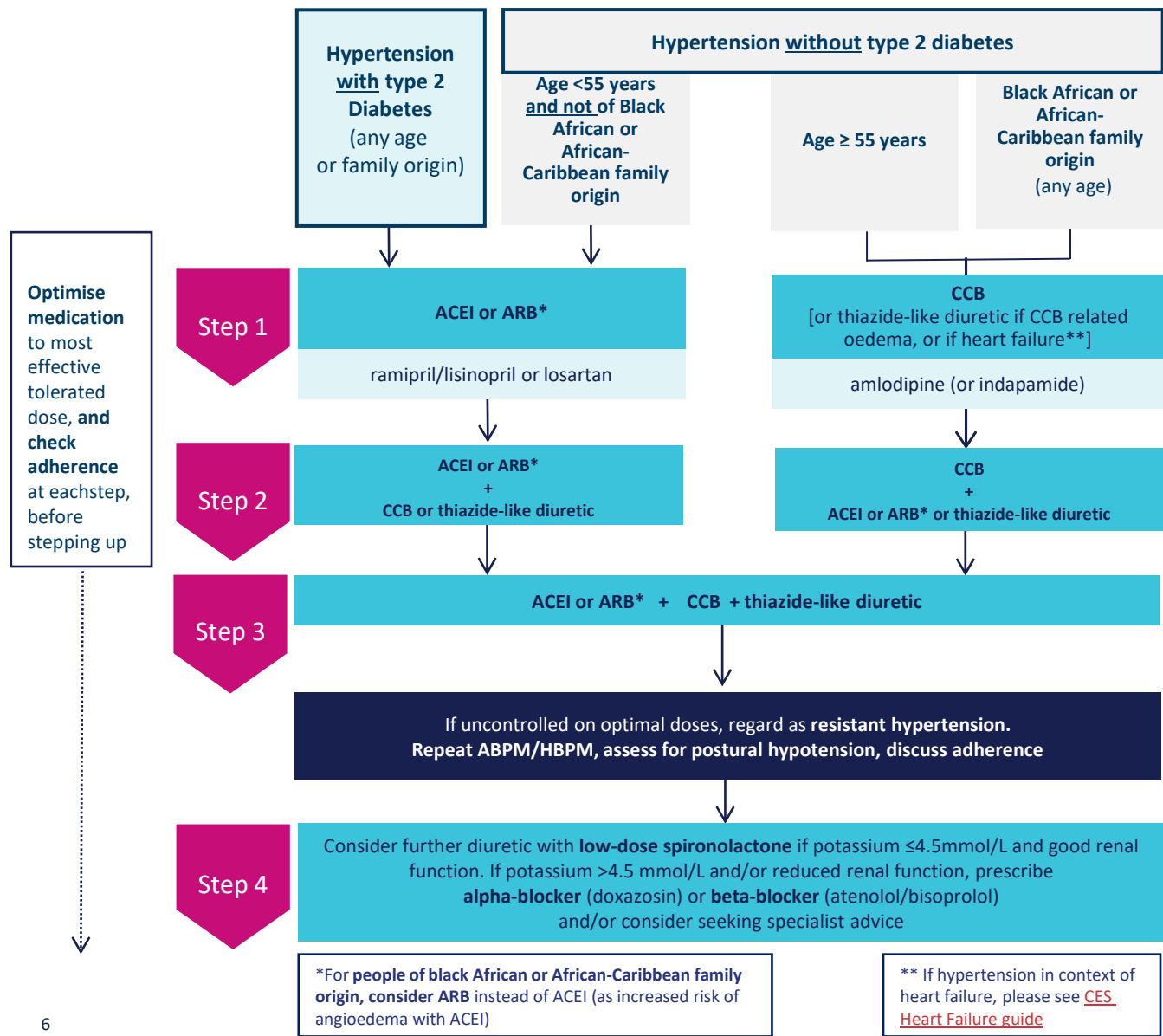
Action	Recommendation	Approx. systolic BP reduction
Reduced weight	Aim for ideal body weight	5-20mmHg/10kg loss
DASH diet	Consume a diet rich in fruits, vegetables, low-fat dairy with reduced saturated and total fat	8-14mmHg
Reduced salt intake	Reduced dietary sodium intake (<1 teaspoon/day)	2-8mmHg
Increased exercise	Regular aerobic physical activity (at least 30 min/day, most days of the week)	4-9mmHg
Reduced alcohol intake	Below or equal to 14 units/week	2-4mmHg

Note: In addition, discourage consumption of excessive caffeine or caffeine-rich products.<sup>4</sup> Average BP reduction (systolic) from one anti-hypertensive drug= 12.5-15.5mmHg.<sup>7</sup> The effects of implementing lifestyle modifications are dose and time dependent, and could be greater for some individuals.<sup>6</sup> In the study used, stress management's impact on BP was variable.<sup>6</sup>

## Which BP target? Aim for NICE BP targets<sup>4, 5, 8, 9</sup>

Which condition?	Which cohort within the condition?	NICE Clinic BP Target <ul style="list-style-type: none"> <li>Use clinical judgment in frailty/multi-morbidity</li> <li>Adjust BP target by <u>5mmHg</u> for ABPM/HBPM</li> </ul>	QOF BP Targets <sup>15</sup> 2021/2022	
Hypertension, including Type 2 Diabetes (but with no CKD)	Age <80yrs	≤140/90mmHg	Hypertension only ≤140/90mmHg	*Note QOF Target for Hypertension in T2DM is ≤140/80mmHg
	Age ≥80yrs	≤150/90mmHg	Hypertension only ≤150/90mmHg	
Diabetes	Type 2 Diabetes	Same as hypertension if no CKD	≤140/80mmHg	
	Type 1 Diabetes + no albuminuria	≤135/85mmHg		
	Type 1 Diabetes + albuminuria or ≥ 2 features of metabolic syndrome	≤130/80mmHg		
CKD	ACR <70mg/mmol	≤140/90mmHg	No QOF target	
	ACR ≥70mg/mmol or co-existent Diabetes	≤130/80mmHg		
IHD/PAD or TIA/Stroke	History of IHD/PAD	≤140/90mmHg	No QOF target for PAD, but for rest, based on age i.e. <80yrs ≤140/90mmHg ≥80yrs ≤150/90mmHg	
	History of TIA/Stroke (if with severe bilateral carotid stenosis: systolic BP 140-150mmHg)	≤130/80mmHg		

Note: For people ≥80 years with hypertension and T2DM, CKD, PAD, CVD or TIA/Stroke, individual NICE guidance on these areas offers no age-specific BP targets for this cohort. However, NICE Hypertension guidelines (as mentioned above) do suggest a target of ≤150/90 mmHg for those ≥80 years with hypertension, but with frailty/multi-morbidity use clinical judgement.



Hypertension in Chronic Kidney Disease <sup>9</sup> (CKD stages 3-5 i.e. eGFR <60ml/min)	
ACR <30 mg/mmol	Follow BP algorithm
ACR ≥30 mg/mmol	1 <sup>st</sup> line: ACEI or ARB, then follow BP algorithm
eGFR corrections	
<b>Corrected eGFR</b> Latest NICE CKD guidance (August 2021) <b>does not recommend</b> adjusting the estimation of glomerular filtration rate (eGFR) in people of African-Caribbean or African family background	
Women with pre-existing hypertension contemplating pregnancy <sup>10</sup>	

Refer to specialist **pre-conception counselling** (page 9)

**Drugs to avoid at conception/in pregnancy include:** ACEI/ARB/thiazide or thiazide-like diuretic (increased risk of congenital abnormalities)

**NICE guidelines:**  
**Stop ACEI/ARBs and change medication (preferably within 2 working days of notification of pregnancy). Offer alternatives:**

- Labetalol if no CI e.g. asthma, nifedipine or methyldopa. Can also remain on amlodipine – GSTT Obstetric Medicine advice
- **Target BP ≤ 135/85 mmHg**
- **Offer aspirin 75-150mg OD from week 12 of pregnancy**

Refer to [Hypertension in Pregnancy clinic](#) (GSTT) ASAP

This guidance is aligned to [SEL IMOC Hypertension 2021](#) guidance for Primary Care

## Hypertension: preferred medication<sup>3, 4, 11, 12, 13, 14</sup>

	Drug	Starting dose	Daily Range	Notes (These are not extensive, please refer to the latest BNF for further information, especially titration increments, cautions and contraindications)
ACEIs	1 <sup>st</sup> Line: Ramipril	2.5mg OD (1.25mg OD in frail/elderly patients)	2.5-10mg OD	<ul style="list-style-type: none"> <li>- For people of Black African or African-Caribbean family origin, <b>consider ARB</b> instead of ACEI (as risk of angioedema with ACEI)</li> <li>- Check baseline renal profile (Na/K/Cr/eGFR). Hyperkalaemia may occur, therefore close monitoring of serum potassium is required</li> <li>- Re-check renal profile within 2 weeks of initiation, or dose increase and then at least annually</li> <li>- <b>Titrate ACEI/ARB up at 2-4 weekly intervals to achieve optimal BP control</b></li> <li>- Initiation/Dose titrations: If serum creatinine increases by &gt;20% (or eGFR falls by &gt;15%) – stop ACEI and seek specialist advice. ACEI dose should only be increased if serum creatinine increases by less than 20% (or eGFR falls by less than 15%) after each dose titration, and potassium &lt;5.5mmol</li> <li>- <b>ACEI/ARB dose should be optimised before the addition of a second agent</b></li> <li>- Side-effects: Symptomatic hypotension can occur on first dosing – suggest to take at night. Dry cough with ACEI, consider switch to ARB</li> </ul>
	2 <sup>nd</sup> line: Lisinopril	10mg OD	10-80mg OD (usual maintenance dose 20mg OD for hypertension)	
ARBs	Losartan	50mg OD (25mg OD if >75yrs old)	50-100mg OD	<ul style="list-style-type: none"> <li>- <b>Caution:</b> Do not combine an ACEI and an ARB to treat hypertension</li> <li>- For diabetic nephropathy ARB of choice: losartan and irbesartan</li> </ul>
	Candesartan	8mg OD	8mg-32mg OD	
CCBs	Amlodipine	5mg OD	5-10mg OD	<ul style="list-style-type: none"> <li>- Increase after 2-4 weeks to maximum dose of 10mg OD</li> <li>- <b>Caution:</b> Interacts with simvastatin – consider switching to atorvastatin</li> <li>- Step 1: If amlodipine causes ankle oedema, consider using a thiazide-like diuretic instead of a CCB</li> <li>- <b>CI:</b> Unstable angina, aortic stenosis</li> <li>- <b>Side effects include flushing and headaches at initiation;</b> swollen ankles especially at higher doses</li> </ul>
Thiazide-like diuretics	Indapamide (IR)	2.5mg OD	2.5mg OD	<ul style="list-style-type: none"> <li>- Check baseline renal profile, then after 2 weeks, then at least annually. If potassium &lt;3.5mmol/L or eGFR &lt;25ml/min, stop indapamide and seek specialist advice</li> </ul>
Aldosterone antagonist	Spironolactone	25mg OD	25mg OD	<ul style="list-style-type: none"> <li>- Step 4: Spironolactone is the preferred diuretic at step 4, but is an unlicensed indication in resistant hypertension (BNF)</li> <li>- Consider only if <b>potassium ≤4.5mmol/L</b> (caution in reduced eGFR &lt;30ml/min, as increased risk of hyperkalaemia). Monitor Na/K/renal function within 1 month and repeat 6 monthly thereafter</li> <li>- If K &gt;4.5mmol/L should be stopped</li> </ul>
α-B	Doxazosin (IR)	1mg OD	2-16mg OD (or BD dosing when dose >8mg/day)	<ul style="list-style-type: none"> <li>- Consider at Step 4 if potassium ≥ 4.5mmol/L. Initial dose of 1mg usually increased after 1-2 weeks to 2mg OD</li> <li>- At doses above 8mg/day, consider split dosing from OD to BD to reduce BP variation</li> <li>- <b>Caution:</b> Initial dose postural hypotension, avoid in elderly as orthostatic hypotension risk</li> </ul>
β-B	Atenolol	25mg OD	25-50mg OD	<ul style="list-style-type: none"> <li>- Consider at Step 4 if potassium ≥ 4.5mmol/L.</li> <li>- Beta blockers may be considered in younger people and in those with an intolerance/CI to ACEI or ARBs, women of childbearing potential, co-existent anxiety/tachycardia/heart failure</li> <li>- <b>Particular caution in T2DM: symptoms of hypoglycaemia may be masked</b></li> <li>- <b>Caution:</b> Increased risk of diabetes when beta-blocker is prescribed with a thiazide diuretic. Beta-blockers can cause bradycardia if combined with certain CCBs e.g. verapamil/diltiazem</li> <li>- <b>CI:</b> Asthma, 2<sup>nd</sup>/3<sup>rd</sup> degree AV block, severe PAD</li> </ul>
	Bisoprolol	5-10mg OD	5-20mg OD	
Related Drugs				
S	Atorvastatin	20mg OD	20-80mg OD	<ul style="list-style-type: none"> <li>- <u>Please see SEL IMOC guideline on lipid management: medicines optimisation pathways (Sept 2021)</u></li> <li>- Primary prevention 20mg, secondary prevention 40- 80mg (alternative is rosuvastatin)</li> </ul>

**AKI SICK DAY RULES<sup>16</sup>** When patients have any of the following: **Vomiting, diarrhoea, or general dehydration** due to intercurrent illness, advice to **STOP** taking the medicines listed below (restart after feeling well/after 24-48hrs of eating and drinking normally):

• **ACE Inhibitors, ARBs, Diuretics, Metformin, NSAIDs, Sulfonylureas, SGLT2 inhibitors** (e.g. Empagliflozin)

This guidance is aligned to SEL IMOC  
Hypertension 2021 guidance for  
Primary Care





## Southwark Patient Support

### Patient resources

- Practice connected social prescribing link worker
- [Southwark free gym and swim](#)
- [Southwark Weight management programme](#)
- [Healthy weight advice and support in Southwark](#)
- [Southwark Sport and Leisure](#)
- [Southwark Wellbeing Hub Directory for community resources](#)
- [NHS England » The NHS Digital Weight Management Programme](#)
- Southwark 'Exercise on Referral' Scheme (see DXS)
- British Heart Foundation: [Preventing Heart Disease \(resources for patients\)](#)
- [Home BP measurements](#)
- [DASH diet](#)
- [Stop smoking services](#)
- [Southwark Healthy Lifestyle Hub](#)

See also page 8 under self-management for excellent BHF patient support

### Shared resources

NICE has produced a document on shared decision making in the context of hypertension and it can be found [here](#)

## Southwark Clinical Support

**Urgent telephone advice-** Consultant connect: Cardiology

**Non-urgent 'Advice & Guidance'**- Depending on the context: Hypertension clinic (GSTT), CKD clinic (GSTT), Diabetic medicine (GSTT/KCH), Obstetric medicine (GSTT), Pregnancy in Hypertension clinic (GSTT)

**Virtual hypertension clinics-** These are available for practices to organise via the community hypertension clinics (see below)

**Community hypertension clinic-** Referral criteria on form (see DXS). Can also provide hypertension drug related advice via email: [gst-tr.KHPCommunityCVD@nhs.net](mailto:gst-tr.KHPCommunityCVD@nhs.net)

**Specialist clinics-** Refer via eRS to: Hypertension clinic (GSTT/KCH), Pre-conception counselling clinic (GSTT), [Pregnancy in Hypertension clinic \(GSTT\)](#), Obstetric Medicine clinic (GSTT) – for pregnant women with multiple co-morbidities, [CKD clinic (GSTT), Diabetic medicine (GSTT/KCH)]

## References

- 1 British Heart Foundation: How can we do better? NHS Southwark CCG (updated 2018, source data QOF 2016/17)
- 2 QOF data analysis March 2021
- 3 SE London Area Prescribing Committee and SW London Medicines Commissioning Group (SELAPC): Managing Uncomplicated Hypertension, published Oct 2014, currently under review
- 4 NICE Guideline NG136 Hypertension in adults: Diagnosis and Management, published Aug 2019, (accessed Jan 2021)
- 5 NICE Guideline NG17 Type 1 Diabetes in adults: Diagnosis and Management, published Aug 2015, updated Dec 2020, (accessed Jan 2021)
- 6 Simces, ZL, Ross SE & Rabkin, SW, 2012, Diagnosis of hypertension and lifestyle modifications for its management, BCMJ Vol 58(8): 392- 398
- 7 Wu J, Kraja AT, Oberman A, Lewis CE, Ellison RC, Arnett DK, Heiss G, Lalouel JM, Turner ST, Hunt SC, Province MA. A summary of the effects of antihypertensive medications on measured blood pressure. American Journal of Hypertension. 2005 Jul 1;18(7):935-42
- 8 Stroke and TIA, Clinical Knowledge Summaries (NICE), last updated March 2017, (accessed Jan 2021)
- 9 NICE Clinical Guideline CG182 Chronic Kidney Disease in adults: assessment and management, August 2021, (accessed Jan 2022)
- 10 NICE Clinical guideline NG133 Hypertension in pregnancy: diagnosis and management, published date: June 2019
- 11 British National Formulary, last updated Jan 2021
- 12 SE London Area Prescribing Committee and SW London Medicines Commissioning Group (SELAPC): Lipid management for the Primary and Secondary Prevention of Cardiovascular Disease (CVD) in Adults, published Oct 2016, review date Sept 2018
- 13 Consultation correspondence – Southwark CCG’s Medicine’s Optimisation Team, CVD community clinic Pharmacists, GSTT Cardiology Team, GSTT Obstetric Medicine Team
- 14 SE London Area Prescribing Committee and SW London Medicines Commissioning Group (SELAPC): BP monitoring for non-diabetic patients in primary care, published Oct 2014, review date Oct 2016
- 15 2021/22 GMS contract for Quality and Outcomes Framework
- 16 [www.nice.org.uk/advice/KTT17/chapter/Evidence-context](http://www.nice.org.uk/advice/KTT17/chapter/Evidence-context)
- 17 NICE Clinical Guidance [CG181]: Cardiovascular disease: risk assessment and reduction, including lipid modification, updated 2016 (accessed Jan 2022).

## Acknowledgements

CESEL guides are co-developed by SEL primary care clinicians and SEL experts (see below) and are localised to include borough specific pathways and resources. The guides go through a formal approval process including SEL Integrated Medicines Optimisation Committee (IMOC) for the medicines content, a local borough-based Primary Care Leads group and CESEL Steering Group with representation from SELCCG and PCNs, and borough-based Medicines Management Teams (MMT). CESEL would like to thank all our colleagues who participated and fed-back during the consultation process.

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**Guide developed by Clinical Effectiveness South East London: Southwark leads**

Contact CESEL at [selccg.clinicaleffectiveness@nhs.net](mailto:selccg.clinicaleffectiveness@nhs.net) and/or visit [https://selondonccg.nhs.uk/covid\\_19/clinical-effectiveness-se/](https://selondonccg.nhs.uk/covid_19/clinical-effectiveness-se/)

## Abbreviations

$\alpha$ -B – Alpha-blocker	GSTT – Guy’s & St Thomas’ NHS Trust
ABPM – Ambulatory blood pressure monitoring	HF – Heart failure
ACEI – Angiotensin converting enzyme inhibitor	K – Serum potassium
ACR – Albumin-creatinine ratio	KCH – King’s College Hospital NHS Trust
A&G – Advice & Guidance	HbA1c – Haemoglobin A1c
AKI – Acute kidney injury	HBPM – Home blood pressure monitoring
ARB – Angiotensin II receptor blocker	IHD – Ischaemic heart disease
$\beta$ -B – Beta-blocker	IR – Immediate release
BD – Twice daily dosing	LVH – Left ventricular hypertrophy
BMI – Body mass index	Na – Serum sodium
BP – Blood pressure	NSAID – Non-steroidal anti-inflammatory drug
CCB – Calcium channel blocker	OD – Once daily (dosing)
CI – Contraindication	PAD – Peripheral arterial disease
CKD – Chronic kidney disease	QOF – Quality and outcomes framework (contract)
Cr – Serum creatinine	QRISK* – refers to QRISK 2 or 3 – an algorithm that predicts 10-year CVD risk. EMIS is currently using QRISK2 (although QRISK3 was released in 2017)
CV – Cardiovascular	Renal profile – this includes serum sodium/potassium/creatinine/eGFR
CVD – Cardiovascular disease	S – Statin
DASH diet – Dietary approaches to stop hypertension diet	SELAPC – South East London Area Prescribing Committee
DXS – Point-of-care tool for EMIS Web	TFT – Thyroid function blood tests
ECG – Electrocardiogram (12-lead)	TIA – Transient ischaemic attack
eGFR – Estimated glomerular filtration rate	T2DM – Type-2 diabetes
eRS – Electronic referral system	
FBC – Full blood count	

Making the right thing to do  
the easy thing to do.

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