

# Hypertension

A guide for Lambeth General Practice

## Key messages

1. Check blood pressure *at every opportunity* (and do a pulse check)
2. Life-style changes can prevent/reduce need for medication
3. Check for complications and do a QRISK
4. Optimise BP management and aim for NICE blood pressure targets
5. Encourage adherence to life-style and medication, review at least annually

Always work within your knowledge and competency

# Why focus on BP in Lambeth?

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>

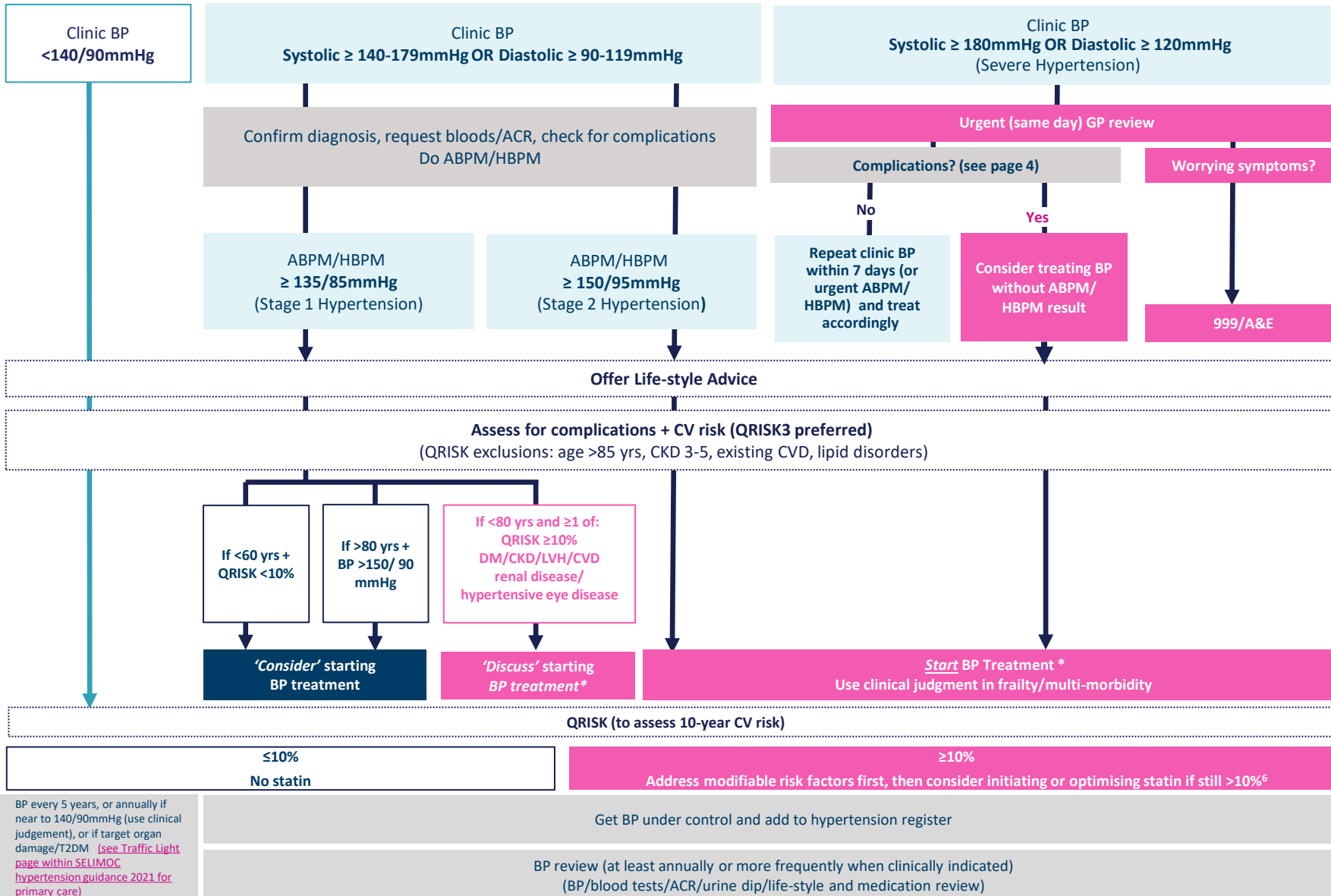
- **Risk reduction:** Every 10 mmHg reduction in systolic BP reduces risk of major CV events by 20%<sup>1</sup>
- **Under-treated:** 28% of Lambeth patients <80 years, with hypertension, have a BP >140/90mmHg<sup>2</sup>
- **Under-diagnosed:** Around 28000 Lambeth residents have BP>140/90 but no diagnosis of hypertension<sup>3</sup>
- **Health inequalities:** Lambeth data shows that patients in most deprived quintile and Black African and Black Caribbean patients are the most likely to have poor BP control<sup>3</sup>

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

- **65** people from having a stroke
- **48** people from developing heart failure
- **61** people from developing IHD
- **196** deaths

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

Confirm hypertension diagnosis using ABPM/HBPM and stratify CV risk <sup>4,5</sup>



See page 4 for notes on:

- Confirming diagnosis with ABPM/HBPM
- When to do postural BPs?
- How to assess for complications?
- QRISK & CKD/CVD
- What are worrying symptoms?
- When to refer to a specialist?

\*New NICE guidance T2DM:

Diagnostic thresholds and treatment targets for BP in people with T2DM are now the same as hypertension alone, unless there is co-existent CKD

See page 5 for evidence on:

- Lifestyle advice

# 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 in readings between arms remains >15 mmHg on the second measurement, 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  $\geq$  20mmHg from sitting to standing), or age  $\geq$ 80yrs
- 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 BP machine is being used and advise to record two BP readings every morning and evening every day, 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 + do a QRISK**

- **Examination:** BMI, waist circumference, fundoscopy/optometry review, CV exam
- **Tests:** renal profile, lipids, FBC, HbA1c, TFT, ACR, urinalysis for haematuria + ECG
- **Record:** smoking status, physical activity level, alcohol intake, family history [use Ardens BP EMIS Template]

**Corrected eGFR in black people of African or Caribbean Family origin<sup>6</sup>**  
Latest NICE CKD guidance (August 2021) **does not recommend** adjusting the estimation of glomerular filtration rate (GFR) in people of African-Caribbean or African family background

## Assessing Cardiovascular (CV) risk: QRISK

- Currently there is a link to QRISK3 calculator via the Ardens template; **if unavailable use QRISK2**
- It may help some people with these conditions to make an informed choice on whether to take a statin. 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 & CKD/CVD

- QRISK is **not** applicable in people considered at high risk of CVD: Type 1DM, CKD (3,4,5), existing CVD, previous stroke/TIA as they should already be on / offered lipid management treatment
- QRISK is also not applicable in people >85 yrs

## When to refer a patient?

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

- If you suspect **secondary causes in a patient of any age** eg Cushing's, Conn's\*
- **If <40 years + BP  $\geq$ 140/90mmHg + no evidence of CVD, renal/hypertensive eye disease or diabetes.** The 10-year CV risk can underestimate the lifetime risk of CV events in this cohort.<sup>4</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 postural hypotension, palpitations, headache, pallor, abdo pain, excess sweating

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>7</sup>

Action	Recommendation	Approx. systolic BP reduction
Reduced weight	Maintain healthy 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	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

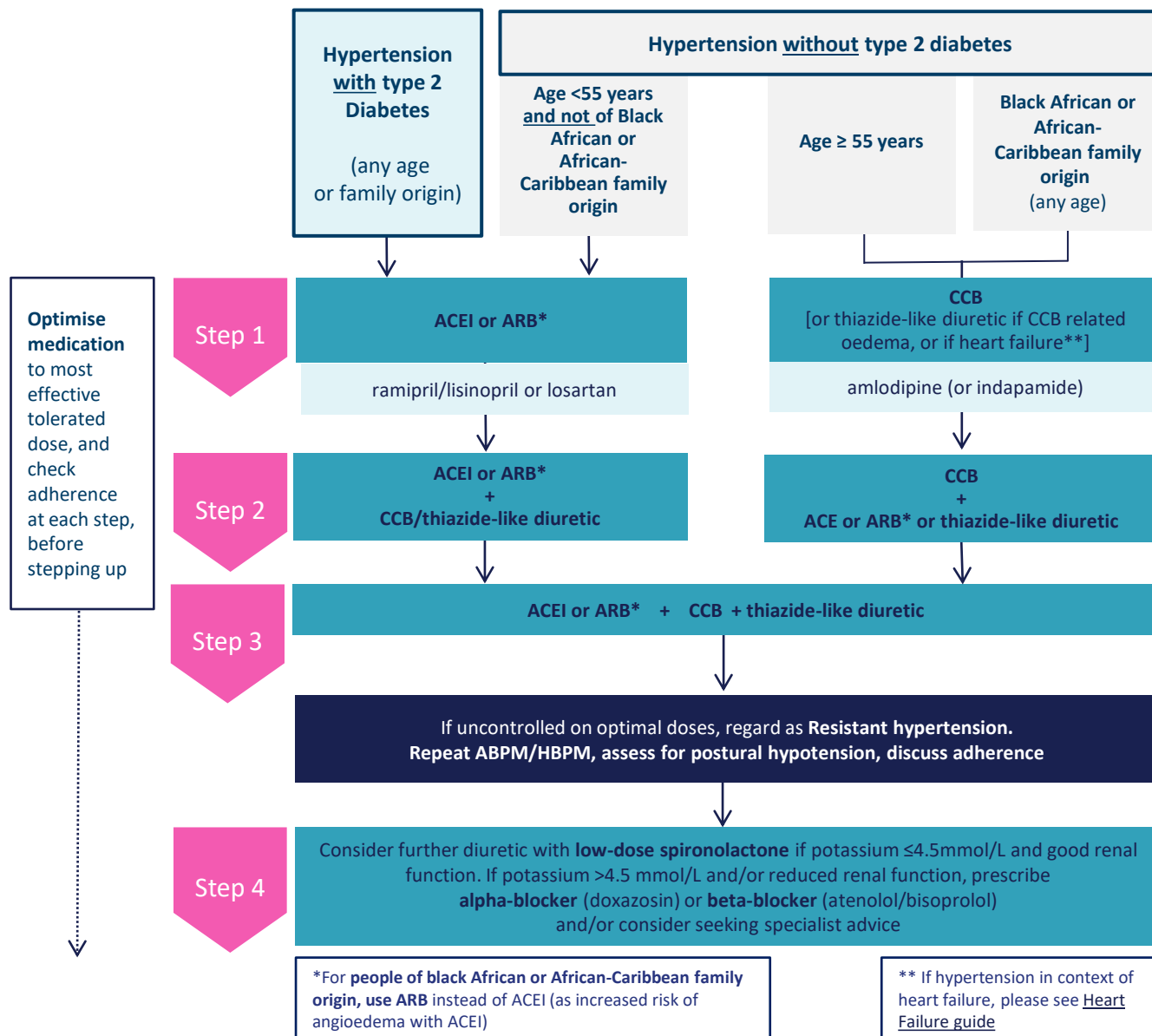
Note: In addition, discourage consumption of excessive caffeine or caffeine-rich products.<sup>5</sup> Average BP reduction (systolic) from one anti-hypertensive drug= 12.5-15.5mmHg.<sup>8</sup>The effects of implementing lifestyle modifications are dose and time dependent, and could be greater for some individuals.<sup>7</sup> In the study used, stress management's impact on BP was variable.<sup>7</sup>

## Which BP target? Aim for NICE BP targets<sup>5, 9, 10, 11</sup>

Which condition?	Which cohort within the condition?	NICE Clinic BP Target	QOF BP Targets <sup>16</sup> 2021/2022	
		<ul style="list-style-type: none"> <li>Use clinical judgment in frailty/multi-morbidity</li> <li>Corresponding targets for ABPM/HBPM are 5mmHg lower than for clinic BPs</li> </ul>		
Hypertension, including Type 2 Diabetes (but with no CKD)	Age <80yrs	≤140/90mmHg	≤140/90mmHg	*Note QOF Target for Hypertension in T2DM is ≤140/80mmHg
	Age ≥80yrs	≤150/90mmHg	≤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 treatment<sup>4,5</sup>



Hypertension in Chronic Kidney Disease <sup>6</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

**Women with pre-existing hypertension contemplating pregnancy<sup>12</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**

	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 <b>Black African or African-Caribbean family origin, use ARB</b> instead of ACEI (as increased risk of angioedema with ACEI)</li> <li>- Check baseline renal profile (Na/K/Cr/eGfr). Hyperkalaemia may occur, therefore close monitoring of potassium is required. 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> <li>- <b>Caution:</b> Do not combine an ACEI and an ARB to treat hypertension</li> <li>- <b>For diabetic nephropathy ARB of choice:</b> losartan and irbesartan</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>- <b>For diabetic nephropathy ARB of choice:</b> 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>- Side effects include flushing and headaches at initiation; 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 (NICE) but is an unlicensed indication in resistant hypertension (BNF). Consider only if potassium ≤4.5mmol/L (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<sup>4</sup></li> <li>- If K &gt;4.5mmol/L it 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<sup>4</sup></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>- Please see <a href="#">SELMOC guideline</a> on lipid management: medicines optimisation pathways (Sept 2021)</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.**, Advise 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). [Link to information for patients.](#)

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





## Lambeth Patient Support

### Patient resources

- **Practice social prescribing link worker or health and wellbeing coach**
- Blood Pressure UK: **Patient information leaflets translated into 32 languages**
- Black and Asian people are being invited to attend a **dedicated wellness clinic** to help detect long-term health conditions
- Lambeth health and wellbeing **information and support** (smoking, healthy eating and physical activity)
- **NHS Digital Weight Management** 12-week online behavioural and lifestyle programme
- NHS Better Health **free tools and support** to kickstart your health (weight, smoking, activity, alcohol)
- **Lambeth Early Intervention Prevention Service (LEIPS)** refer via DXS
- Silverfit **physical activity for older people**
- Your Healthier You (**Diabetes prevention**) refer via DXS
- Local activity finders: **getactive** and <https://www.gomammoth.co.uk/>
- Walking for health **Lambeth Community Health Walking Scheme**
- Lowering your blood pressure with **DASH diet**

### Shared resources

NICE has produced a document on shared decision making in the context of hypertension and it can be found at:

<https://www.nice.org.uk/about/nice-communities/nice-and-the-public/making-decisions-about-your-care>

## Lambeth Clinical Support

**Urgent telephone advice-** Consultant connect: Cardiology at GSTT/KCH by telephone or via App

**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.KHPCcommunityCVD@nhs.net](mailto:gst-tr.KHPCcommunityCVD@nhs.net)

**Specialist clinics-** Request **advice and guidance** or referral to specialist clinics 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

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4. South East London Integrated Medicines Optimisation Committee (SEL IMOC) Hypertension Guidance for Primary Care April 2021
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9. [SE London Integrated Medicines Optimisation Committee \(SEL IMOC\):Lipid management: Medicines Optimisation Pathways, accessed Sept 2021](#)
10. [NICE Guideline NG17 Type 1 Diabetes in adults: Diagnosis and Management, published Aug 2015, updated Dec 2020, \(accessed Jan 2021\)](#)
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14. Consultation correspondence – Southwark CCG’s Medicine’s Optimisation Team, CVD community clinic Pharmacists, GSTT Cardiology Team, GSTT Obstetric Medicine Team, SEL IMOC
15. 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
16. [Acute Kidney Injury \(AKI\): use of medicines in people with or at increased risk of AKI](#)

## Acknowledgements

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**Guide developed by Clinical Effectiveness South East London: Lambeth Leads**

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

## Abbreviations

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

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