

## Baseline Measurements (see page 2 for when to refer to a specialist)

Full lipid, renal, thyroid and liver profiles, HbA1c to exclude secondary causes and co-morbidities

Measure baseline liver transaminase (ALT or AST) before starting a statin

Measure CK if unexplained muscle pain before starting a statin or if patient is at risk of muscle pain e.g. vitamin D deficiency, fibromyalgia, multiple tablet intolerance.

CK should not be measured routinely especially if a patient is asymptomatic

### Primary prevention

Identify and address all modifiable risk factors - smoking, diet, obesity, alcohol intake, physical activity, blood pressure and HbA1c

If QRISK >10% over next 10 years\* or CKD (eGFR<60ml/min/1.73m<sup>2</sup>) or T1DM plus over 40 years old, diabetes for >10yrs, nephropathy or CV risk factor

**1st line: Atorvastatin 20mg once daily**

2nd line: Rosuvastatin 10mg once daily

**Consider ezetimibe if statin intolerant or contra-indicated. For further info on managing statin intolerance see pathway [here](#).**

### Secondary prevention

**1st line: Atorvastatin 80mg one daily**

Start with 20mg if eGFR<60ml/min/1.73m<sup>2</sup> and titrate dose. If eGFR<30ml/min, seek advice of renal specialist before titrating dose.

If not tolerated: Reduce dose and re-titrate or try

2nd line: Rosuvastatin 10mg once daily

Identify and address all modifiable risk factors: smoking, diet, obesity, alcohol intake, physical activity, blood pressure and HbA1c

**Consider ezetimibe if statin intolerant or contra-indicated. For further info on managing statin intolerance see pathway [here](#).**



Measure liver transaminase within 2-3 months of starting treatment and then within 2-3 months of every additional up titration and then again at 12 months, but not again unless clinically indicated

Measure LDL-C at 2-3 months

If a 50% reduction in LDL-C is not achieved at 2-3 months or next review then increase dose of statin +/- or consider adding ezetimibe 10mg once daily

Measure liver transaminase within 2-3 months of starting treatment and then within 2-3 months of every additional up titration and then again at 12 months, but not again unless clinically indicated

Measure LDL-C at 2-3 months

**If 50% reduction not achieved or if LDL-C baseline value is not available, consider target LDL-C < 1.4mmol/L**

**Add ezetimibe 10mg once daily**



Reassess after three months.

If LDL-C remains high on max. tolerated statin/ezetimibe/bempedoic acid, then carry out fasting lipid profile and assess eligibility for injectable therapy against NICE criteria.

**Alirocumab or Evolocumab (prescribed by lipid specialist)**

May be preferred due to availability of CV outcome data.

Refer if criteria in table below are met, definitions of "High" and "Very high risk" can be found on NICE TAs:

NICE TA393 Alirocumab NICE TA394 Evolocumab	Without CVD	With CVD	
		High risk <sup>1</sup>	Very high risk <sup>2</sup>
Primary non-FH or mixed dyslipidaemia	Not recommended	LDL C > 4.0 mmol/L	LDL C > 3.5 mmol/L
Primary heterozygous-FH	LDL C > 5.0 mmol/L	LDL C > 3.5 mmol/L	

**Inclisiran (prescribed in primary care)**

If fasting LDL-C ≥ 2.6mmol/L despite maximum tolerated statin plus ezetimibe (NICE TA733)

\*QRISK may underestimate risk in people who have additional risk because of underlying medical conditions or treatments. These include the following groups of people:

Severe obesity (BMI>40kg/m<sup>2</sup>), treated for HIV, serious mental health problems, taking medicines that can cause dyslipidaemia such as antipsychotic medication, corticosteroids or immunosuppressant drugs, autoimmune disorders such as SLE, non-diabetic hyperglycaemia, significant hypertriglyceridaemia (fasting triglycerides 4.5-9.9mmol/L), recent risk factor changes e.g. quit smoking, BP or lipid treatment.

**Do not use QRISK if a familial disorder is suspected.**

Consider socio-economic status as an additional factor contributing to CVD risk.

If TC>7.5mmol/L and/or LDL-C, >4.9mmol/L and/or non-HDL-C, >5.9mmol/L, a personal and/or family history of confirmed CHD (<60 years), and with no secondary causes: suspect familial hypercholesterolaemia (FH)

**If FH suspected: use Simon Broome or Dutch Lipid Clinic Network (DLCN) criteria to make a clinical diagnosis.**

Consider secondary causes of hyperlipidaemia rather than FH.

**Treatment targets in FH: if clinical diagnosis of FH and/or other risk factors present, follow the recommended treatment management pathway for primary or secondary prevention as for non-FH, BUT aim to achieve at least 50% reduction of LDL-C from baseline**

**Refer to Secondary Care Lipid Clinic for further assessment (using fasting lipid profiles) if unable to reach target or if TC>9.0mmol/L and/or LDL-C >6.5mmol/L and/or non-HDL-C >7.5mmol/L or TGs >20mmol/L**  
If TGs 10-20mmol/L. repeat test (after 5 days, but within 2 weeks). Refer if TGs remain > 10mmol/L.

### Frequently asked questions

**What do I do if someone is intolerant of statins?**

Guidance is available here: [Statin-intolerance-pathway-January-2022.pdf \(england.nhs.uk\)](#)

**When do we ask for a fasting lipid profile?**

Fasting lipid profiles are necessary before Lipid Clinic referral. Fasting lipid profiles provide a more accurate LDL cholesterol, particularly when triglycerides are high (>4.5mmol/L).

**What is the target for HDL:cholesterol ratio ?**

HDL:cholesterol ratio is used to assess initial risk. Once treatment has started there is no target ratio.

**What do I do if LFTs are abnormal?**

If ALT or AST are elevated but are less than 3 times the upper limit of normal then continue the statin and repeat in a month. If they remain elevated but are less than 3 times the upper limit of normal then continue statin and repeat again in 6 months.

If ALT or AST are greater than 3 times the upper limit of normal then do not initiate a statin or discontinue statin therapy already prescribed and repeat the LFTs in a month. If ALT and AST return to baseline or are < 3 times the upper limit of normal, restart with lower dose/alternative statin. Repeat ALT or AST in 1 month.

If ALT or AST remain high off lipid-lowering therapy, look for other causes. The only lipid-lowering therapy that can be considered in this situation are bile acid sequestrants (colestyramine etc), PCSK9-inhibitors, and inclisiran, if the patient qualifies for any of these drugs. If the ALT and AST subsequently fall, a statin could be re-tried provided the ALT or AST are monitored.

**Which statins are classed as high intensity?**

Atorvastatin 20mg-80mg and rosuvastatin 10mg-40mg are high intensity statin doses.

**What is the maximum recommended dose of rosuvastatin?**

For people aged 70 and over, of Asian origin, with CrCL 30-60ml/min or on a fibrate or clopidogrel then start at 5mg.

**How is PCSKi injectable therapy accessed?**

Alirocumab and Evolocumab are prescribed by specialists because of the funding model recommended by NICE.

**How is inclisiran accessed and prescribed?**

More information is available here: [file \(frimleyccg.nhs.uk\)](#). Guidelines recommend that inclisiran initiation is intended to be carried out within the primary care setting.

**Why are local lipid thresholds different from NICE?**

The decision has been made to align with European Society of Cardiology guidelines on lipid targets in order to prioritise the prevention of CV disease. Appropriate up titration of statins and ezetimibe will improve local outcomes at a low cost. This was agreed by Frimley ICS CV Group and Frimley ICS Lipid Management Group.

**References:** 1. [NHS Accelerated Access Collaborative » Summary of national guidance for lipid management \(england.nhs.uk\)](#) Accessed on 03/04/24; 2. [NHS Accelerated Access Collaborative » Statin intolerance pathway \(england.nhs.uk\)](#) access on 11/08/22; 3. [ESC Guidelines on Dyslipidaemias \(Management of\) \(escardio.org\)](#) accessed on 11/08/22 4. NICE CG181 [Overview | Cardiovascular disease: risk assessment and reduction, including lipid modification | Guidance | NICE](#) Accessed on 11/08/22; 5. NICE TA393 [Overview | Alirocumab for treating primary hypercholesterolaemia and mixed dyslipidaemia | Guidance | NICE](#) access on 11/08/22; 6. NICE TA394 [Overview | Evolocumab for treating primary hypercholesterolaemia and mixed dyslipidaemia | Guidance | NICE](#) access on 11/08/22; 7. NICE TA733 [Overview | Inclisiran for treating primary hypercholesterolaemia or mixed dyslipidaemia | Guidance | NICE](#) access on 11/08/22. 8. ESC Guidelines [ESC Guidelines on Dyslipidaemias \(Management of\) \(escardio.org\)](#)