NICE guidelines on lipids and statins

NICE 2014, CG181

PRIMARY PREVENTION OF CVD (TARGET: fire and forget except in CKD)

GENERAL POPULATION

Age 40–85y	Aged 85y or over
• **If QRISK2 ≥10% offer atorvastatin 20mg after period of lifestyle modification** (NICE do not say how long) OR if lifestyle modification declined. • If QRISK2 <10% NICE do not say when we should repeat it. To identify those we should be prioritising for treatment we are asked to do 'guestimated' QRISK2s on patients using whatever data we have (even if patchy/out of date) and then do formal risk assessments (having updated and completed the data) on those with a 'guestimated' QRISK2 of ≥10%.	• **Offer ATORVASTATIN 20mg to reduce risk of non-fatal MI.** ***N.B. Limited evidence: few trials in this age group.*** *NICE argue that, based on age alone, older people are at higher risk, especially if they smoke/have hypertension. Patient preference, co-morbidity, harms of polypharmacy need to be balanced against any potential benefits:* ***which may only be in reducing non-fatal MIs!****).*

TYPE 2 DIABETES	TYPE 1 DIABETES	CHRONIC KIDNEY DISEASE (eGFR <60 and/or ACR ≥3)
• Use the QRISK2 risk assessment tool to assess CVD risk. • **If QRISK2 ≥10% ATORVASTATIN 20mg.**	• **Do NOT use risk assessment tools.** • **Offer statins (start with ATORVASTATIN 20mg) if ANY of these:** ○ Over 40y ○ Had diabetes >10y ○ Established nephropathy ○ Other CVD risk factors. *Lower dose suggested because lack of evidence for statins in type 1 diabetes.*	• **Offer ATORVASTATIN 20mg to all.** Do NOT use risk assessment tools. • If eGFR ≥30, increase dose if <40% fall in non-HDL cholesterol. • If eGFR <30 increase dose only in consultation with renal team. *N.B. Limited evidence: based mainly on consensus. Lower statin doses because of concern about adverse events/licence.*

SECONDARY PREVENTION OF CVD (TARGET: 40% reduction in non-HDL cholesterol)

GENERAL POPULATION (any age)

- Do NOT use risk assessment tools.
- **Offer atorvastatin 80mg (lower doses if drug interactions, risk of adverse events, patient preference).**
- Do NOT delay statins to improve lifestyle (start statin and work on lifestyle at the same time).

Dose is based on modelling clinical and cost-effectiveness.

Atorvastatin does not yet have a licence for secondary prevention at this dose.

TYPE 2 DIABETES	TYPE 1 DIABETES	CHRONIC KIDNEY DISEASE (eGFR <60 and/or ACR ≥3)
As for general population.	As for general population.	**Treat as for PRIMARY prevention in chronic kidney disease.**

Abnormal lipid profiles: management

If there is significant dyslipidaemia, consider causes of this – excess alcohol, uncontrolled diabetes, hypothyroidism, liver disease, nephrotic syndrome.

Total cholesterol		Triglycerides		
Total cholesterol >7.5 AND family history of early coronary disease*	**Total cholesterol >9 OR non-HDL >7.5mmol/L**	**Triglycerides 4.5–9.9mmol/L**	**Triglycerides 10–20mmol/L**	**Triglycerides >20mmol/L**
Consider if familial hypercholesterolaemia present: follow the NICE guidance on this (in Online handbook).	Refer, even in the absence of a family history of premature cardiac disease.	Refer if non-HDL cholesterol is >7.5mmol/L *(CVD risk tools will underestimate risk).*	Repeat after fasting: 30% will be normal on fasting. If still raised, consider other causes, and seek specialist advice.	Refer urgently (if not due to excess alcohol or uncontrolled diabetes).

*Coronary disease <60y in 1st degree relative (parents, siblings, children) OR <50y in 2nd degree relative (grandparents, grandchildren, aunts & uncles, nieces/nephews, half siblings).

NICE guidelines on lipids and statins (CG181, 2014)

Before starting statins:

- **Bloods**
  - Full lipid profile (cholesterol, HDL, LDL and TGs) – fasting is NOT required
  - HbA1c
  - Renal function
  - LFTs for transaminase (ALT or AST)
  - TSH.

Ask if patient has ever had persistent generalised unexplained muscle pains (whether with statin or not): if yes, measure CK.

- If CK >5× upper limit of normal, re-measure in 1w. If still >5× upper limit of normal, do not start statin.
- If CK raised but <5× upper limit of normal, start statin at a lower dose.

Statins are potentially teratogenic: do not use in pregnancy. Stop 3m before conception, restart when stops breast-feeding.

Monitoring

After 3m statin treatment:

- **Recheck lipids.**
  - Aim for ≥40% reduction in non-HDL cholesterol
  - If this is not achieved discuss compliance and timing of dose (take at night), lifestyle modification
  - If at higher risk than suggested by QRISK2 alone (e.g. BMI >40, HIV, autoimmune disease, antipsychotics, steroids, immunosuppressants), offer increased dose.
- **Recheck ALT/AST** (see below if abnormal).

Annually:

- Review lifestyle.
- Consider measuring non-HDL cholesterol to inform discussion.
- Consider annual screen for diabetes.
- At the first annual review check AST/ALT. After 12m no further testing of liver function is needed. *(Note: the US FDA say no monitoring of liver function is required!)*
- Do NOT measure CK in asymptomatic people on statins.

Managing adverse events

If adverse events occur

- Stop and restart at lower dose when symptoms have resolved.
- Reduce dose of statin.
- Try lower intensity statin (simvastatin, pravastatin, fluvastatin).
- If still unable to tolerate, seek advice.
- Do not stop statins because of a rising HbA1c.

Muscle symptoms/abnormal CK

- Advise patient on statins to seek medical help if they develop muscle symptoms (pain, tenderness, weakness).
- If this occurs check CK. If they have been on a statin for more than 3m, consider other causes.
- Do NOT check CK if asymptomatic.

Abnormal LFTs on statins

- Do NOT routinely stop statins if AST/ALT is under 3x the upper limit of normal.

Treatments other than statins

- Do NOT use/recommend the following routinely (alone or in combination with statins): plant stanols/sterols, fibrates, nicotinic acid (niacin), bile acid sequestrants, omega-3 (mainly due to lack of evidence)
- Do NOT advise co-enzyme Q_{10} or vitamin D to help with statin side-effects.

What role for ezetimibe? (NICE 2016, TA385)

- As monotherapy if statins contraindicated/intolerance (= potential harm to patient, not patient doesn't want statin!).
- Alongside statins if cholesterol insufficiently lowered by statin alone.
- A change from initial statin therapy to an alternative statin is being considered.

Lifestyle for all with CVD or at increased CVD risk

In primary prevention: encourage lifestyle modification and review and reassessment of CV risk before starting statins.

In secondary prevention: don't delay statin whilst modifying modifiable risk factors.

- **Smoking: stop!**
- **If overweight: work towards a healthy weight.**
- **Diet**
  - Reduce fat intake and swap saturated fats with mono-unsaturated and polyunsaturated fats (use olive oil/rapeseed oil).
  - Reduce sugar intake (especially refined sugars and fructose).
  - When eating starchy foods use whole grains.
  - Eat at least 5 portions of fruit and vegetables/day.
  - Eat at least 2 portions of fish a week, 1 of which should be oily fish: tuna (but not tinned tuna – all the oil has been sucked out) salmon, trout, mackerel, sardines, pilchards, kipper, eel(!), whitebait, herring.
  - Eat at least 4 portions per week of unsalted nuts, seeds and legumes (beans, lentils, peanuts and peas – high in fibre and protein but low in fat).
- **Alcohol:** do not drink more than 3–4U alcohol/day (men) and 2–3U/d (women) and do not binge drink.
- **Exercise:** 150min a week of moderate intensity exercise (light sweat) or 75min of vigorous intensity exercise (hard breathing, inability to maintain a conversation) PLUS muscle strengthening activities 2x a week.