FAMILIAL HYPERCHOLESTEROLAEMIA

If cholesterol >7.5 consider familial hypercholesterolaemia:

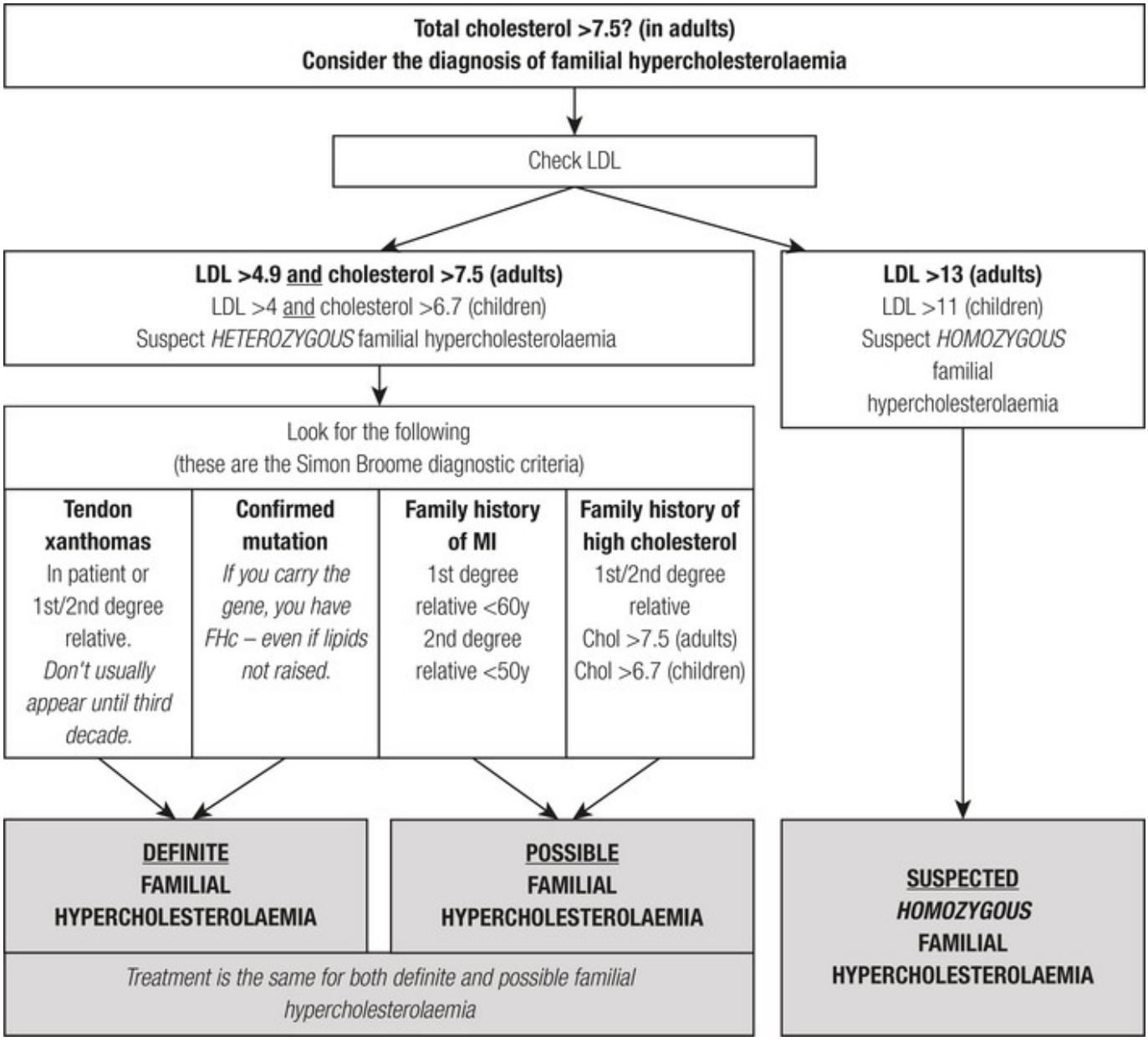
- Caused by a mutation in the pathway that clears LDL.
- Autosomal dominant, so a 50% chance of a child inheriting the gene from their parents.
- Heterozygous state (single defective gene) has a prevalence of 1 in 500. One in a million are homozygous (two defective genes,) which leads to CHD in childhood and early death.

It disproportionately affects younger people. By age 60, of those with untreated hypercholesterolaemia:

50% of men will have had an MI.

30% of women will have had an MI.

If identified early, the risks can be significantly reduced. To do this, cascade testing is required. If wait until someone is 40 or 50 and having a cholesterol as part of their 'MOT', it is too late (for them and their relatives).



First degree relatives are parents, siblings, children.

Second degree relatives are grandparents/grandchildren, aunts/uncles, nieces/nephews, half siblings.

Referral

- Refer patient with suspected Familial hyperchoelsterolaemia to a lipid clinic for assessment, cascade testing and treatment.
- If symptoms/signs of coronary heart disease, refer to cardiologist.

Testing for FHc in children (critical to prevent early damage)

- If one affected parent:
  - Test by age 10 (or as soon as possible after this):
    - Offer DNA testing if family mutation known.
    - Measure LDL concentration if family mutation not known, and repeat after puberty to exclude diagnosis.
- If two parents affected (or clinical signs in child):
  - Test by age 5 (or as soon as possible after this):
    - Measure LDL concentration.
    - If LDL >11, consider diagnosis of FHc and manage appropriately.

Management of FHc (definite and possible)

- Do NOT use CV risk estimation tools (e.g. QRISK) as they will significantly underestimate risk.
- Treatment is for life.
- Statins are first line in adults and children. Beyond that, take advice!
- Ezetimibe may be considered in those with familial hypercholesterolaemia, either in combination with statins or as monotherapy if statins are not tolerated/contraindicated (NICE 2016, TA 385).

Aim is to reduce LDL by more than 50% from pre-treatment levels.

- All the usual lifestyle advice should be offered (smoking, diet, activity, weight management, alcohol).
- If homozygous the lipid clinic may offer them LDL-apheresis (their blood is run through a machine to remove cholesterol)
- In women:
  - Statins are not recommended during pregnancy (risk of congenital malformation) or breastfeeding (but women can breastfeed on bile acid sequestrants).
  - The COCP is not contraindicated. However, because COCPs may slightly increase cardiovascular risk, alternatives should be considered.

Early Treatment of Fhc resulted in risk reduction was 76% for MIs

Annual review

- Look for symptoms/signs of CHD (consider an ECG).
- Check smoking status.
- Check LDL levels.
- Review medication side-effects and compliance.
- Review progress with cascade testing.
- Update family history (new CHD events etc.).

There are new injectable agents such as evolocumab and alirocumab available in secondary care.