Peripheral Arterial Disease (PAD)

- PAD is caused by the atherosclerotic process, and therefore is highly linked to cardiovascular disease.
- **Smoking and diabetes** are the two biggest risk factors. Half of those with a diabetic foot ulcer have PAD.
- **Symptoms** range from asymptomatic to intermittent claudication to Chronic Limb Threatening Ischaemia (CLTI). Acute limb ischaemia is caused by thrombus formation or embolus.

Risk Factors for PAD

- Hypertension, diabetes, hyperlipidaemia, CVD
- Lifestyle: smoking, alcohol abuse, low physical activity, poor diet (high salt, high fat)
- FH, age, gender (male>female)
- Stress/anxiety/depression
- Social determinants of health (poverty, social exclusion, illiteracy, air pollution)

Look for PAD if:

- Symptoms suggestive of PAD
- Age >65y and smoker
- Age >50y and CKD
- Diabetes
- Non-healing wounds on the leg or foot
- Unexplained leg pain
- Patient needs to use compression hosiery
- Before undergoing any procedure on the leg or foot

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Is there evidence of acute ischaemia?
(Pallor, Pulseless, Paraesthesia, Paralysis, Perishingly cold, Pain) → If 'Yes', then urgent surgical review and transfer to casualty

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History & examination

History is more useful than examination! Careful hx of pain, CVD, risk factors

	CLTI	Intermittent claudication
Pain	• Night pain, relieved by hanging foot lower than bed • Often don't report any claudication pain as don't/can't walk far enough; and/or peripheral neuopathy so don't feel pain	• No rest pain • Typically pain in calf on walking, worse if hurrying or going uphill; pain resolves quickly on resting • Higher/atypical symptoms can occur e.g. thigh, buttock, hip pain that resolves with rest • Hx can be falsy reassuring as people with PAD often adapt their activities
Wounds	Non-healing ulcer, gangrene	
Pulses	Usually absent	May be absent
Temperature	Cold foot (most predictive sign)	
Buerger's test	Lie patient down, when elevate leg foot goes white; lower foot below bed and it goes red	No colour change

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Investigations

ABPI (Ankle Brachial Pressure Index)	
>1.4	Abnormal (calcified arteries)
0.9-1.09	Normal
0.41-0.9	Mild to Moderate PAD
<0.4	Severe PAD

- ABPI is tricky and not accurate in CLTI due to collateral circulation and calcification
- Alternative if ABPI not available is lower limb ultrasound – ask for arterial flow

→ If 'Normal', reconsider history and other possible diagnoses:

- Spinal stenosis
- Arthritis
- Venous claudication
- Chronic compartment syndrome
- Symptomatic bakers cyst
- Nerve root compression

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If ABPI suggests PAD:

- Aggressive control of risk factors: smoking cessation, diabetes control, BP control, weight loss
- **DO NOT use compression stockings!**
- Aspirin 75mg OD (or Clopidogrel 75mg OD) lifelong
- If high risk patient (age >65y OR >1 CVD OR >2 of: smoker, DM, eGFR<60, heart failure) discuss with consultant to consider aspirin AND rivaroxaban (2.5mg BD)
- Statin lifelong, ideally high-dose (start atorvastatin 40mg OD and increase to 80mg if tolerated/possible)
- Exercise (shown to improve walking time and relieve symptoms in claudication)
- Refer to general surgery/vascular if severe PAD or features of CLTI
- **EVEN IF REFER TO SURGEONS PLEASE ENSURE FOLLOW-UP IN FAMILY MEDICINE CLINIC!**
- Analgesia (may need neuropathic agents as well as simple analgesia)

References: BMJ 2018;360:j5842; Up-To-Date accessed 2/11/23**;** NICE CG147; Tran B. *Heart* 2021;**107**:1835–1843; ESC 2024 guidelines, European Heart Journal (2024) 45, 3538–3700; 2024 ACC/AHA Guideline. Circulation 149;24.