

# Peripheral Arterial Disease / Chronic Limb-Threatening Ischaemia Assessment and Referral Form

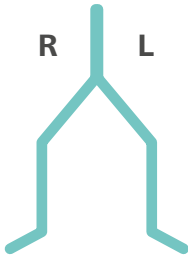
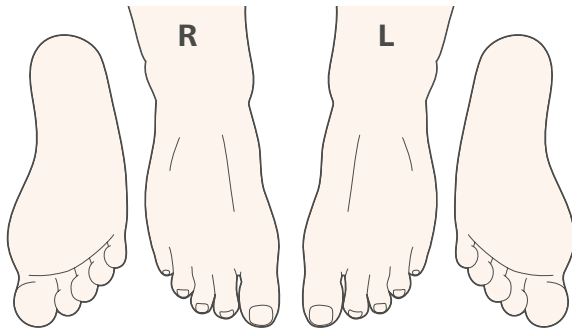
(refer to supporting information for clarification)

Screening question for referral	
1 Do you suspect poor arterial blood supply?	Yes / No
Screening questions for URGENT referral	
2 Does the patient have constant pain in the foot (typically relieved by dependence and worse at night)?	Yes / No
3 Does the patient have a non-healing wound of more than 2 weeks duration below the knee and/or gangrene on the foot?	Yes / No
<p><b>If you do not suspect poor arterial blood supply, please consider an alternative referral pathway. STOP, THINK</b>, is the patient you are considering referring suitable for a vascular referral which might end in surgery? If unsure and would like to discuss, please use 'Advice and Guidance' via eRS or call your local team.</p> <p><b>Admit patient as an emergency if there is:</b></p> <ul style="list-style-type: none"> <li>Clinical evidence of <b>acute limb ischaemia</b> (acute pain, pallor, pulseless, perishingly cold, paraesthesia/acute sensory change, paralysis/acute motor dysfunction for &lt;2 weeks).</li> <li>Clinical evidence of <b>severe infection/sepsis</b> with systemic signs eg. tachycardia, pyrexia, hypotension or patient feeling unwell, or spreading cellulitis, abscess crepitus or significant deterioration over a short period.</li> </ul>	
Patient details	
Name	NHS Number
Address	Date of Birth
Patient contact phone number	
GP details	
Date of assessment	Date of referral
Transport requirements	
Already known to Vascular	Yes / No <b>If Yes</b> check if the referral is still active.
Wound Image attached	Yes / No
Referrer details	
Name	Contact details
Role	Date
Functional status	
Rockwood Clinical Frailty Scale (1-9):	

Essential Information				
Reason for referral				
Previous vascular surgery?			Previous amputation?	
Risk factors: (Please circle/tick)	Diabetes	Hypertension	Ischaemic heart disease	
	Smoker / ex-smoker	Hyperlipidemia	Stroke / TIA	CKD
Symptoms	Left		Right	
	Tick if Yes	Duration	Tick if Yes	Duration
Constant pain in the foot				
Foot pain waking patient from sleep at night				
Lower limb/foot ulceration or gangrene				
Local signs of infection				
Total distance able to walk before needing to stop, and reason for stopping (metres)				

Please send with GP summary of past medical history and medications if available.

**Do not defer referral if unavailable.**

Examination	
 <p>Please mark the presence or absence of pulses with a + or -</p>	 <p>Please mark the location of any ulcers</p>

Additional Information. Do not delay referral if this section cannot be completed				
Wifl Score: (0 to 3 in each severity domain, with a maximum total Wifl score of 9)				
Wound	Ischaemia (mmHg)		Infection	
	Toe	Ankle		
0: No ulcer/no gangrene	0: $\geq 60$	$\geq 100$	0: Non-infected	
1: Small ulcer/no gangrene	1: 40-59	70-99	1: <2cm cellulitis/erythema	
2: Deep ulcer/gangrene	2: 30-39	50-69	2: >2cm cellulitis/erythema	
3: Extensive ulcer/gangrene	3: <30	<50	3: Severe/systemic sepsis	
	Left		Right	
Total Wifl score (0-9)				
Ankle Brachial Pressure Index (ABPI)				
Toe pressure				
Doppler waveform (Please select as appropriate)	Posterior tibial: Monophasic	Absent Multiphasic	Posterior tibial: Monophasic	Absent Multiphasic
	Dorsalis pedis: Monophasic	Absent Multiphasic	Dorsalis pedis: Monophasic	Absent Multiphasic

## Supporting Information

The referral form is intended to cover all arterial referrals into vascular services for those with peripheral arterial disease and where chronic limb-threatening ischaemia (CLTI) is suspected. It is intended to distinguish urgent and non-urgent referrals where time-sensitive guidelines exist from conditions which can wait for a routine clinic appointment.

This includes life limiting intermittent claudication symptoms in an intact foot. If intermittent claudication is present, first line management should be based in primary care. Referral to vascular is only needed if the patient fails to respond to first line management (supervised or unsupervised exercise and risk factor modification)<sup>1</sup>. The use of this referral form for CLTI would be expected to trigger an outpatient appointment for the patient within 48 hours<sup>2</sup>.

The referral form has been built to be edited collaboratively by primary care teams and vascular surgery services, to ensure referral pathways are developed that work for both sets of clinicians and their patients.

## Screening Questions

### 1. Do you suspect poor arterial blood supply?

Poor arterial blood supply in this context means that there is an insufficient blood supply to heal a wound or perfuse the lower limb to keep a patient pain free. Signs of poor arterial disease include:

- Documented diagnosis of peripheral arterial disease (PAD)<sup>3</sup>,
- Risk factors for PAD (smoking, diabetes, hypertension, hypercholesterolaemia)
- Ankle brachial pressure index (ABPI) of ABPI is  $<0.9$  or  $>1.3$  and/or a toe pressure  $<60$ mmHg without alternative explanations for the reading
- Cool foot, with capillary refill  $>3$  seconds,
- Absence of palpable foot pulses
- Necrotic (black) wound.

### 2. Does the patient have constant pain in the foot (typically relieved by dependence and worse at night)?

ischaemic rest pain is typically described by patients as:

- A very severe ache, or a painful numb feeling.
- Experienced across the forefoot and can be concentrated in a wound or the toes.
- Constant and often worsened by activity such as walking or leg elevation
- Neuropathy can be a confounding factor in this assessment.
- If there is intermittent leg or foot pain that does not occur every night the patient is in bed, an alternative cause should be considered.

### 3. Does the patient have a non-healing wound or gangrene on the foot?

Non-healing wounds that are deteriorating quickly, or have signs of infection, necrosis, severe pain or are on a foot with signs of ischaemia should be referred for urgent review.

If you answer "No" to the first screening question, please consider an alternative diagnosis.

## NHS e-Referral Service e-RS and advice and guidance

NHS e-Referral Service (e-RS) advice and guidance gives providers the facility to have two-way digital conversation with referring clinicians, to support patient care, provide referral management education, and reduce unnecessary hospital referrals.

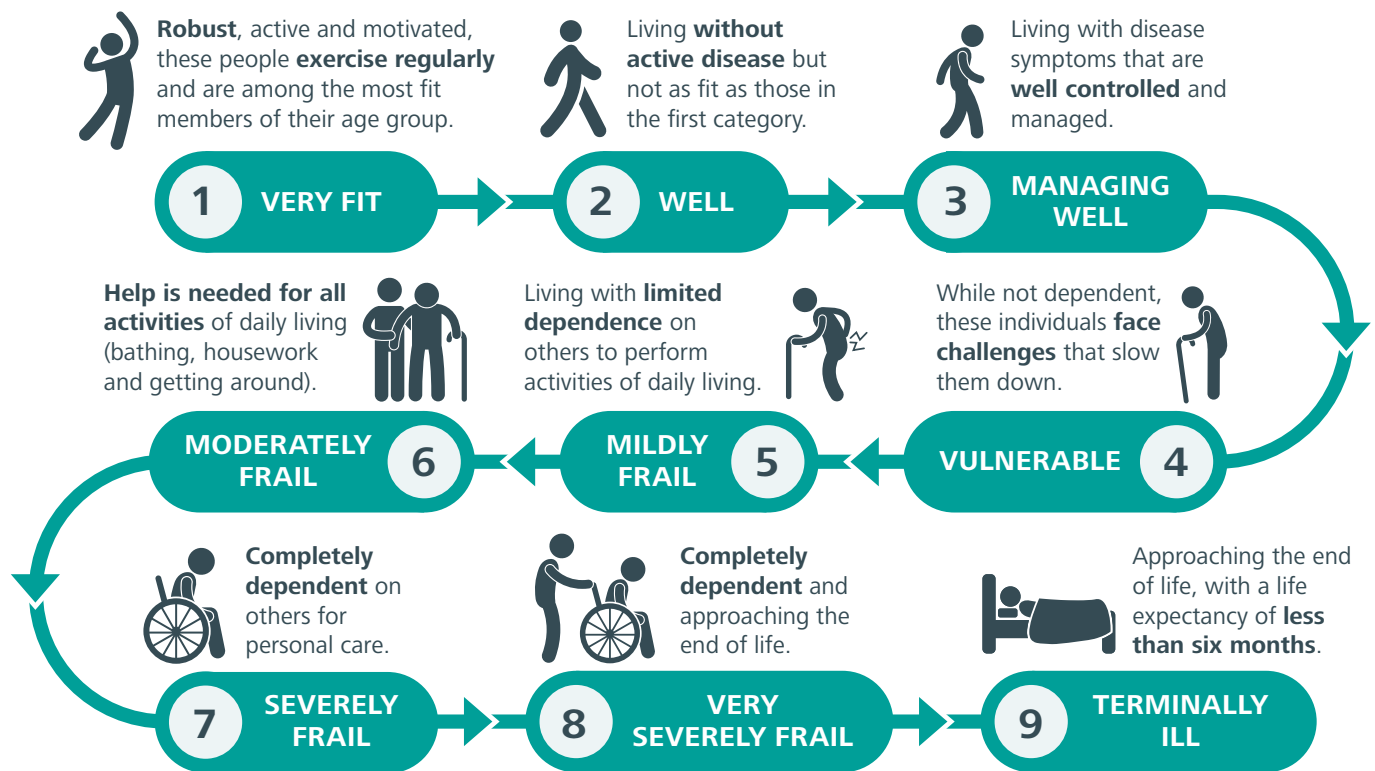
Please see below for more information

<https://digital.nhs.uk/services/e-referral-service/document-library/advice-and-guidance-toolkit/advice-and-guidance-for-gps-and-referring-clinician-teams>

## Functional Status

Functional status indicates whether a surgical procedure may be appropriate prior to offering an appointment for a full assessment.

## The Rockwood Frailty Score<sup>4</sup>



If the patient is very frail, disabled or lacks capacity, or receiving palliative care, please discuss the proposed referral with the patient, their carers, other involved clinicians, and the vascular team before making a referral.

### Additional Information

The Wifl score<sup>5</sup> is used to judge the risk of limb loss and the potential benefits of revascularisation.

Component	Score	Description		
<b>W</b> (Wound)	0	No ulcer (ischaemic rest pain)		
	1	Small, shallow ulcer on distal leg or foot without gangrene		
	2	Deeper ulcer with exposed bone, joint or tendon ± gangrenous changes limited to toes		
	3	Extensive deep ulcer, full thickness heel ulcer + calcaneal involvement ± extensive gangrene		
<b>I</b> (Ischaemia)		ABI	Ankle pressure (mmHg)	Toe pressure or TcPO <sub>2</sub>
	0	≥0.80	>100	≥60
	1	0.60-0.79	70-100	40-59
	2	0.40-0.59	50-70	30-39
	3	<0.40	<50	<30
<b>fI</b> (foot Infection)	0	No symptoms/signs of infection		
	1	Local infection involving only skin and subcutaneous tissue		
	2	Local infection involving deeper than skin/subcutaneous tissue		
	3	Systemic inflammatory response syndrome		

Example: A 65-year-old male diabetic patient with gangrene of the big toe and a <2 cm rim of cellulitis at the base of the toe, without any clinical/biological sign of general infection/inflammation, whose toe pressure is at 30 mmHg would be classified as Wound 2, Ischaemia 2, foot Infection 1 (WIFI 2-2-1). The clinical stage would be 4 (high risk of amputation). The benefit of revascularisation (if feasible) is high, also depending on infection control.

## ABPI

An ankle brachial pressure index (ABPI) of  $<0.9$  indicates there is some peripheral arterial disease reducing blood flow to the foot. In the context of diabetes and renal disease, an ABPI may be falsely elevated due to calcification of the blood vessels below the knee. For this reason, ABPIs greater than 1.3 indicate incompressible vessels and should be disregarded. In these cases, toe pressures can be used to get a more accurate picture of blood flow.

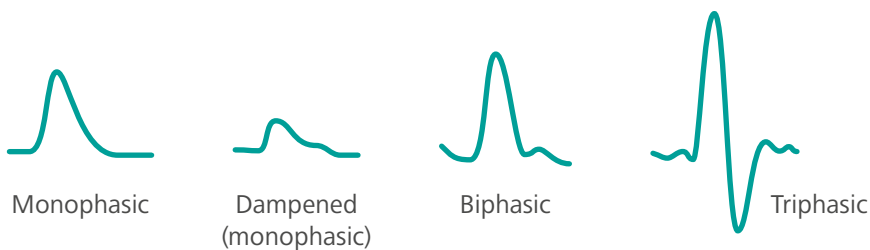
## Toe Pressure

A toe pressure of  $\geq 60$ mmHg indicates adequate perfusion to heal a foot wound if other factors are optimised.

## Doppler Wave Form

In the context of incompressible calf arteries (ABPI  $> 1.3$ ) and an absent hallux, Doppler Wave Form may be the only available assessment of blood flow.

- Monophasic waveforms indicate significant arterial disease affecting blood flow.
- Multiphasic (biphasic and triphasic) signals indicate adequate blood flow for healing.



## References

1. [cks.nice.org.uk/topics/peripheral-arterial-disease/management/intermittent-claudication](https://cks.nice.org.uk/topics/peripheral-arterial-disease/management/intermittent-claudication)
2. Provision of Vascular Services, Vascular Society, 2021 [www.vascularsociety.org.uk/\\_userfiles/pages/files/Resources/FINAL%20POVS.pdf](http://www.vascularsociety.org.uk/_userfiles/pages/files/Resources/FINAL%20POVS.pdf)
3. [cks.nice.org.uk/topics/peripheral-arterial-disease/diagnosis/assessment/](https://cks.nice.org.uk/topics/peripheral-arterial-disease/diagnosis/assessment/) (Accessed 21.03.2022)
4. Rockwood, K., Song, X., MacKnight, C., Bergman, H., Hogan, D. B., McDowell, I., & Mitnitski, A. (2005). A global clinical measure of fitness and frailty in elderly people. *CMAJ : Canadian Medical Association journal = journal de l'Association medicale canadienne*, 173(5), 489–495. [doi.org/10.1503/cmaj.050051](https://doi.org/10.1503/cmaj.050051)
5. Mills JL Sr, Conte MS, Armstrong DG, Pomposelli FB, Schanzer A, Sidawy AN, Andros G; Society for Vascular Surgery Lower Extremity Guidelines Committee. The Society for Vascular Surgery Lower Extremity Threatened Limb Classification System: risk stratification based on wound, ischemia, and foot infection (WIfI). *J Vasc Surg*. 2014 Jan;59(1):220-34.e1-2. doi: 10.1016/j.jvs.2013.08.003. Epub 2013 Oct 12. PMID: 24126108.
6. Tehan, P.E., Mills, J.L., Sebastian, M., Oldmeadow, C. and Chuter, V., 2020. Toe-brachial index and toe systolic blood pressure for the diagnosis of peripheral arterial disease. *Cochrane Database of Systematic Reviews*, 2020(11), p.CD013783.