

THE NORTH THORESBY PRACTICE

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Protocol for Doppler assessment

Appointments are to be booked for 60 minutes with a clinician, who is fully competent to complete the Doppler ABPI studies. This duration allows for the initial introduction, explanation and questions. Additionally, it allows for the patient to be rested for 20 minutes prior to the assessment to allow pressures to settle, whilst allowing the clinician to carry out a lower limb assessment also. Furthermore, the remaining time allowance allows for the Doppler studies to be completed, calculated, explained and documented accurately.

The consultation

- To introduce yourself to the patient
- To gain an insight of the patients understanding and the purpose of the assessment, ensuring they are aware of the reason why the assessment has been requested.
- Explain the procedure to the patient, to prepare them, make them aware of their role, and provide the opportunity for the patient to ask any questions.
- Complete history taking
- Confirm consent with the patient, this needs to be documented in the patients notes
- Advise the patient that the procedure can be stopped at any time of the consultation- this is to be explained and documented in the patients records.
- To reassure the patient throughout their consultation

Environment

- Ensure the room is warm, private and well-lit to ensure the patient feels reassured and safe

- The procedure should take place in a closed room, with curtains that can be pulled around should the patient desire for further privacy.
- Provide a chair for the patient located at the side of the couch, to allow them to place their belongings close by.

Equipment

- Well stocked room to avoid any delays
- A remote controlled couch, to allow the clinician to raise the bed to their specific needs
- Couch roll
- Pillow
- A clean wheeled trolley
- Paper towels
- Paper and pen
- A validated doppler ultra sound with an 8 MHz probe
- Sphygmomanometer with an appropriate sized blood pressure cuff, suitable for individuals patient's upper arm and lower leg circumference
- Ultrasound gel

Assessment/procedure

- Ensure the patient consents for the procedure
- Ask the patient to remove their shoes and socks and raise their trousers to reveal lower limbs. Also ask the patient to ensure their arms are free from any clothing also.
- Ask the patient to lie in a supine position for 15-20 minutes to eliminate any gravitational influences and to remain flat throughout the procedure, unless otherwise indicated.
- Apply the blood pressure cuff to the upper arm above the elbow, apply the ultrasound gel over the brachial artery, followed by placing the probe on to the same area. The probe is to be held at an angle between 45-70 degrees to obtain a clear signal.
- The blood pressure cuff is to be inflated whilst maintaining the probe in position; inflation of the cuff should be stopped once the signal disappears, as

this represents the occlusion of the arterial blood flow. The cuff is to be slowly deflated, whilst the clinician listens for the return of the signal, this reading is then recorded as the brachial reading. This is then repeated on the other arm, the highest brachial reading is to be used for the ABPI calculation. Ultrasound gel should be wiped away from the arms ensuring area is clean and dry to aid patient comfort

- The cuff is removed to the patients lower leg above the ankle, ensuring the cables of the cuff are facing upwards and towards to body.
- The clinician is then to palpate the foot pulses, the most commonly used pulses are the dorsalis pedis artery and posterior tibial artery, although the peroneal artery and anterior tibial artery can be used. Ultrasound gel is to be applied over the artery, again placing the probe in position at an angle between 45-70 degrees. Await for the audible signal and slowly inflate the cuff until the signal is disappeared, again representing the occlusion of the arterial blood flow. Once achieved, slowly deflate the cuff until the signal returns, recording each arterial reading. If at any time the clinician is unable to occlude the arterial blood flow, this is suggestive of severe arterial disease. The study should then be aborted, and the Gp to be made aware as referral to vascular may need to be completed.
- Once all readings are obtained, all equipment is to be removed, ensure all gel is wiped clean from the patient's skin. Advise the patient can reapply clothing / footwear.
- The clinician must then calculate the patients ABPI as this will help to ascertain whether there are any arterial insufficiencies. The clinician is to take the highest brachial reading and the highest foot readings from each foot for the calculation to be completed. The highest foot reading is to be divided by the highest brachial reading for both left and right.

ABPI

- Less than 0.5- suggests severe arterial disease –**requires urgent vascular referral**

- 0.5 -0.8 suggests the presence of arterial disease or can be suggestive of mixed arterial/venous disease- **refer to vascular, reduced compression may be applied under the guidance of a specialist.**
- Between 0.8-1.3 not suggestive of any significant of any arterial disease- **compression can be safely applied in most people, although if the patient has a diagnosis of cardiac failure seek advice as there may be a risk of fluid overload.**
- Greater than 1.3 can be suggestive of arterial calcification, more so in patients with diabetes, rheumatoid arthritis, systemic vasculitis, atherosclerotic disease and advanced chronic renal disease. **Care should be taken when interpreting abpi in relation to the aforementioned conditions.**

Doppler studies should be repeated between 6-12 monthly, although the clinician makes a judgement on when this should be completed.

Following assessment

The patient should be informed of their ABPI reading and given an explanation on what this means or is suggestive of. Dependent on the result, it may be necessary to discuss compression treatment options with the patient, outlining the benefits of this and the risks associated if they fail to agree to any further treatment/management options. Where a reading is abnormal, the GP should be informed for further assessment, investigations or referrals to be completed.

References

[Interpretation of ABPI | Diagnosis | Leg ulcer - venous | CKS | NICE](#)

[wound-essentials-5-performing-a-doppler-assessment-the-procedure.pdf](#)

<http://www.sign.ac.uk>

<http://www.wounds-uk.com>

These guidelines should be reviewed annually to ensure standard practice is the same and publications and evidence based practice remains up to date.

Next review on or before May 2022

Completed by Gemma Hooper