

Leg Arterial Ultrasound Scan



ARTERY AND VEIN DIAGNOSTICS



Penrith | Suite 3, Level 1, Nepean Private Specialist Centre, 1A Barber Avenue,
Kingswood NSW 2747

Macquarie Park | Wise Clinic, Level 1, 11 Khartoum Road, Macquarie Park NSW 2113



02 9037 7353



02 9037 7352



info@arteryvein.com.au

Patient Information

1. Understanding Peripheral Arterial Disease (PAD)

Peripheral Arterial Disease (PAD) occurs when the arteries supplying blood to the legs become narrowed or blocked due to **atherosclerosis** — a build-up of fatty plaque inside the artery wall. Over time, this reduces blood flow to the muscles and tissues of the legs, especially during walking or exercise.

PAD is a common condition, particularly in people over 50, and is strongly associated with cardiovascular risk factors such as:

- Smoking (current or past)
- Diabetes
- High blood pressure
- High cholesterol
- Kidney disease
- Family history of vascular disease
- Previous heart attack or stroke

PAD is important to diagnose early because it can affect mobility, quality of life, and overall cardiovascular health.

1.1 Common Symptoms of PAD

You may experience:

- Leg pain when walking (claudication) that improves with rest
- Cramping in the calf, thigh, or buttock
- Cold feet or toes
- Numbness or weakness in the legs
- Slow-healing wounds or ulcers
- Pale or bluish skin colour
- Reduced hair growth on the legs
- In severe cases, pain at rest (especially at night)

Some people have no symptoms, even with significant arterial disease.

1.2 Why PAD Matters

Reduced blood flow can lead to:

- Difficulty walking or exercising
- Tissue damage or ulcers
- Increased risk of infection
- Critical limb ischaemia (severe lack of blood flow)
- Higher risk of heart attack and stroke

A lower-limb arterial duplex ultrasound is a key test for diagnosing PAD and guiding treatment.

2. Why You Have Been Referred for This Scan

Your doctor may recommend this scan if you have:

- Leg pain when walking
- Non-healing wounds or ulcers
- Cold or discoloured feet
- Weak or absent pulses
- Diabetes with foot symptoms
- A history of smoking
- Previous vascular surgery or stenting
- A bruit heard over the femoral artery
- Suspected aneurysm
- Follow-up after bypass surgery or angioplasty

The scan helps identify the location and severity of arterial narrowing or blockage and guides treatment decisions.

3. What the Scan Examines

A lower-limb arterial duplex ultrasound uses B-mode imaging, colour Doppler, and spectral Doppler to assess both the structure of the arteries and the speed and pattern of blood flow.

Your scan will evaluate:

3.1 Major Arteries of the Leg

Including:

- Common femoral artery
- Superficial femoral artery
- Deep femoral artery
- Popliteal artery
- Tibial arteries (anterior, posterior)
- Peroneal artery
- Dorsalis pedis and plantar arteries (if clinically indicated)

3.2 Plaque and Narrowing (Stenosis)

The scan identifies:

- Presence of plaque
- Degree of narrowing
- Whether the plaque is soft, calcified, or irregular
- Areas of turbulent or reduced flow

3.3 Blood Flow Velocities

Doppler measurements assess:

- Peak systolic velocity (PSV)
- Velocity ratios
- Waveform changes (triphasic, biphasic, monophasic)
- Evidence of occlusion or near-occlusion

These findings help determine the severity of PAD.

3.4 Bypass Grafts and Stents

If you have had previous vascular surgery, the scan evaluates:

- Graft patency
- Anastomosis sites
- Stent flow and integrity
- Early or late narrowing (stenosis)

3.5 Aneurysms

The scan may detect:

- Popliteal artery aneurysms
- Femoral artery aneurysms
- Associated thrombus

These findings are important for preventing complications.

4. How to Prepare for Your Scan

Most patients do not need special preparation. However:

- Wear loose, comfortable clothing that can be easily rolled up, or pants/trousers that can be easily removed for the scan.
- Avoid applying moisturisers or oils to your legs on the day of the scan.
- If you have wound dressings or surgical sites, the sonographer will advise whether they should remain in place or be adjusted.
- If you have difficulty standing or lying flat, please inform the sonographer so we can adjust your positioning.
- Continue taking your usual medications unless your doctor advises otherwise.
- If you prefer a male or female sonographer, please let the practice know when booking.

If your doctor has requested an **urgent arterial scan**, please attend as soon as possible.

5. What to Expect During the Scan

A lower-limb arterial ultrasound is safe, painless, and performed by a highly trained vascular sonographer with advanced expertise in arterial disease assessment.

5.1 Duration

The scan typically takes **30–45 minutes**, depending on your anatomy and symptoms.

5.2 Positioning

You may be examined:

- Lying on your back
- Slightly turned to one side
- Occasionally standing for specific assessments

Your comfort is always prioritised.

5.3 The Procedure

- Warm gel is applied to your leg.
- The sonographer gently moves a handheld probe along the arteries from the groin to the ankle.
- You may hear whooshing sounds from the Doppler — this is normal and represents blood flow.
- The sonographer may take multiple measurements to assess blood flow patterns.
- If you prefer a male or female sonographer, please let the practice know when booking.

5.4 Safety

Ultrasound uses sound waves — not radiation — making it safe for all patients, including those who are pregnant. If you feel uncomfortable at any time, please let the sonographer know so we can adjust your position.

6. How the Scan Helps Guide Treatment

Your scan results help determine the most appropriate management, which may include:

6.1 Medical Management

- Blood-thinning medication
- Cholesterol-lowering therapy
- Blood pressure control
- Diabetes management
- Smoking cessation
- Exercise programs (supervised walking therapy)

6.2 Minimally Invasive Treatments

If significant narrowing is detected, your doctor may discuss:

- Angioplasty (balloon widening of the artery)
- Stent placement
- Atherectomy (plaque removal in selected cases)

These procedures are performed by vascular specialists.

6.3 Surgical Options

For severe or complex disease, surgery may be recommended:

- Bypass grafting
- Endarterectomy (plaque removal)

These procedures restore blood flow to the leg and help prevent tissue damage.

7. After the Scan

7.1 Review of Images

Your scan images and measurements are reviewed by a vascular specialist or reporting sonographer trained in arterial assessment.

7.2 Report Delivery

A detailed report is sent to your referring doctor, usually within **24–48 hours**, and includes:

- Location and severity of arterial narrowing
- Blood flow velocities and waveform analysis
- Presence of occlusions or aneurysms
- Graft or stent assessment (if applicable)
- Summary of clinical significance

7.3 Next Steps

Your doctor will discuss the results with you and outline treatment options tailored to your symptoms and lifestyle.

8. Frequently Asked Questions

Is the scan painful? No. You may feel mild pressure, but the scan is not painful.

Can I drive afterward? Yes. Most patients can drive immediately after the scan. In rare cases, your sonographer may need to discuss the findings with a vascular specialist before confirming it is safe for you to drive.

Do I need to stop medications? No. Continue your usual medications unless your doctor advises otherwise.

Is ultrasound safe? Yes. Ultrasound is completely safe and does not use radiation.

Will this scan treat my condition? No. This scan is diagnostic only. It provides essential information to guide treatment decisions.

9. Why Choose Our Vascular Lab

State-of-the-art ultrasound technology for high-resolution imaging and precise haemodynamic assessment.

Examinations performed in accordance with international arterial ultrasound standards, ensuring accuracy, consistency, and best-practice methodology.

Comprehensive, clinically focused reporting to support accurate diagnosis and tailored treatment planning.

Patient-centred care, with an emphasis on comfort, clear communication, and a supportive experience throughout your visit.