

Arm Arterial Ultrasound Scan



ARTERY AND VEIN DIAGNOSTICS



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Patient Information

1. Understanding Upper-Limb Arterial Disease

The arteries of the arms supply oxygen-rich blood to the shoulders, arms, hands, and fingers. These arteries include:

- Subclavian artery
- Axillary artery
- Brachial artery
- Radial and ulnar arteries
- Palmar arches and digital arteries (in selected cases)

Upper-limb arterial disease is less common than arterial disease in the legs, but it can still cause significant symptoms and functional limitations. Conditions affecting these arteries may include:

- **Atherosclerosis (plaque build-up)**
- Arterial narrowing or blockage
- Aneurysms
- Trauma-related injury
- Thoracic outlet syndrome (TOS)
- Vasospasm (e.g., Raynaud's phenomenon)
- Emboli (clots travelling from the heart or proximal arteries)

An upper-limb arterial duplex ultrasound is a non-invasive, highly accurate test that assesses blood flow and identifies abnormalities in the arteries of the arm.

1.1 Common Symptoms of Upper-Limb Arterial Disease

You may experience:

- Arm or hand pain during activity
- Coldness or colour changes in the fingers
- Numbness or tingling
- Weak or absent pulses
- Delayed capillary refill
- Hand or finger ulcers
- Sudden onset of pain or pallor (possible embolus)
- Symptoms triggered by arm elevation (possible TOS)

Some patients have no symptoms, and arterial disease is discovered during evaluation for other conditions.

1.2 Why Upper-Limb Arterial Disease Matters

Reduced blood flow to the arm or hand can lead to:

- Difficulty performing daily tasks

- Tissue damage or ulceration
- Increased risk of infection
- Functional impairment
- In severe cases, critical ischaemia of the hand

Early diagnosis is essential to prevent complications and guide treatment.

2. Why You Have Been Referred for This Scan

Your doctor may recommend this scan if you have:

- Arm or hand pain during use
- Cold, pale, or discoloured fingers
- Weak or absent pulses
- Suspected arterial narrowing or blockage
- Symptoms of thoracic outlet syndrome
- Raynaud's phenomenon or vasospasm
- A history of trauma or arterial injury
- A bruit heard over the subclavian or axillary artery
- A suspected embolus
- Non-healing wounds or ulcers on the fingers
- Follow-up after arterial surgery, stenting, or bypass
- Differences between right and left arm pressures

The scan helps identify the cause of your symptoms and guides treatment decisions.

3. What the Scan Examines

An upper-limb arterial duplex ultrasound uses B-mode imaging, colour Doppler, and spectral Doppler to assess the structure and blood flow of the arteries.

Your scan will evaluate:

3.1 Major Arteries of the Arm

Including:

- Innominate artery
- Subclavian artery
- Axillary artery
- Brachial artery
- Radial artery
- Ulnar artery
- Palmar arch (if clinically indicated)

3.2 Blood Flow Velocities

Doppler measurements assess:

- Peak systolic velocity (PSV)
- Velocity ratios
- Waveform patterns (triphasic, biphasic, monophasic)

- Evidence of stenosis or occlusion

3.3 Plaque and Narrowing (Stenosis)

The scan identifies:

- Presence of plaque
- Degree of narrowing
- Calcification
- Turbulent or reduced flow

3.4 Aneurysms and Dilatation

Assessment includes:

- Subclavian or axillary aneurysms
- Post-traumatic pseudoaneurysms
- Aneurysms associated with thoracic outlet compression

3.5 Thoracic Outlet Syndrome (If requested)

Dynamic testing may include:

- Arm elevation
- Head turning
- Abduction or external rotation

These manoeuvres help assess whether the subclavian artery is compressed during certain positions.

3.6 Post-Surgical or Post-Intervention Assessment

If you have had previous treatment, the scan evaluates:

- Bypass graft patency
- Stent integrity
- Anastomosis sites
- Flow abnormalities

4. How to Prepare for Your Scan

Most patients do not need special preparation. However:

- Wear loose, comfortable clothing, or tops that allow easy access to the arm and shoulder.
- Avoid applying moisturisers or oils to your arms 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 raising or rotating your arm, please inform the sonographer so we can adjust your positioning.
- Continue taking your usual medications unless your doctor advises otherwise.

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

5. What to Expect During the Scan

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

5.1 Duration

The scan typically takes **20–30 minutes**, depending on your anatomy and symptoms.

5.2 Positioning

You may be examined:

- Lying on your back
- Sitting upright
- With your arm resting comfortably
- With your arm raised or rotated for dynamic testing (if required)

Your comfort is always prioritised.

5.3 The Procedure

- Warm gel is applied to your arm and shoulder.
- The sonographer gently moves a handheld probe along the arteries from the collarbone to the wrist.
- You may hear whooshing sounds from the Doppler — this is normal and represents blood flow.
- The sonographer may ask you to change arm positions to assess for compression or altered flow.
- 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. 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
- Vasodilator therapy (for vasospasm)
- Smoking cessation

- Exercise or physiotherapy programs

6.2 Minimally Invasive Treatments

If significant narrowing or blockage is detected, your doctor may discuss:

- Angioplasty (balloon widening of the artery)
- Stent placement
- Thrombolysis (clot-dissolving treatment)

6.3 Surgical Options

For severe or complex disease, surgery may be recommended:

- Bypass grafting
- Endarterectomy (plaque removal)
- Thoracic outlet decompression (for TOS)

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 upper-limb 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
- Dynamic testing results (if performed)
- 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.

Why do I need this scan if my symptoms are intermittent? Some arterial conditions, such as vasospasm or positional compression, only appear during certain movements. Ultrasound helps identify these patterns.

9. Why Choose Our Vascular Lab

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

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.

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