

## Interventional Radiology

# Artery access for interventional procedures

Arteries are part of your body's circulatory system. The circulatory system delivers blood with oxygen, nutrients, and hormones around your body through your arteries.

### What is artery access?

In many interventional procedures, treatment is delivered through your arteries to a specific part of your body.

To deliver treatment to a specific part of your body:

1. we make an entry into an accessible artery
2. a thin tube (catheter) is placed through this entry into the artery
3. the catheter is guided to the target artery
4. we deliver the treatment

The most common sites for the entry are:

- the femoral artery (transfemoral) in your groin
- the radial artery (transradial) in your hands or wrists

The interventional radiologist will examine your arteries on the day of your procedure. They will discuss with you the best site to assess your artery.



## Patient Information

### **Transfemoral artery access**

#### **During the procedure**

The interventional radiologist will inject local anaesthetic into the skin in your groin to numb the area. They will then place a needle into your femoral artery in your groin.

The needle is exchanged to a small tube (sheath). This allows the radiologist to pass other interventional equipment into the artery.

We remove the sheath placed into your artery at the end of the procedure.

#### **After the procedure**

To stop the small hole in your femoral artery from bleeding, the interventional radiologist will either:

- close or plug the hole with a vascular closure device, or
- apply firm pressure onto your groin until the bleeding stops

You will need to lie in bed for a few hours to reduce the risk of bleeding from your groin. During this time, we will check your groin regularly for any bleeding or swelling.

#### **Risks**

The risks of a complication from transfemoral artery access depend on a number of factors, for example, how deep your artery is and if there is any disease in your artery. In general, complication rates range are between 0 and 15 in 100 people.

#### **Access site bleeding**

Bleeding from a transfemoral artery access can happen:

- as bleeding at the small incision site
- as internal bleeding
- as swelling containing blood clots (haematoma)

## Patient Information

- as swelling containing blood clots and persistent bleeding from the artery (pseudoaneurysm)

Most access site bleeding stops without treatment or by applying pressure to the access site.

Occasionally, we may need to do more intervention or surgery to stop the bleeding.

### **Infection**

The symptoms of access site infection are pain, swelling, skin redness, or discharge from the groin.

Infection may need treated with antibiotics or drainage of infection.

### **Arteriovenous fistula**

Occasionally, the artery and the vein at the access site can connect. This is known as an arteriovenous fistula.

Arteriovenous fistula is an uncommon complication and does not usually need treatment. In rare cases, we may need to surgically repair the artery and vein.

### **Arterial occlusion**

The artery in your leg can become blocked. This reduces the blood supply to the leg.

The causes of artery blockage include:

- blood clots that form at the access site or travel from the access site
- an atherosclerotic plaque that is knocked off from the femoral artery then migrates down the artery in the lower part of the leg, or
- if a closure device is not deployed correctly or malfunctions

Arterial occlusion is a rare complication that may need intervention or surgery.

## Patient Information

### **Transradial artery access**

The operator will assess the suitability of your radial artery for the procedure. This involves:

- an ultrasound scan of the arteries in your wrist or hand and
- a clinical examination of the blood supply to your hand

The operator will numb the skin over your radial artery with a local anaesthetic injection. A needle will then be inserted into your radial artery in your hand or wrist. This will be exchanged to a tubular covering (sheath) which allows other interventional equipment to be passed into the artery.

To relax your artery, a mixture of medications, known as a “radial artery cocktail” will be injected into the sheath. The medication will also prevent blood clots forming during the procedure.

You may get a burning sensation in your arm, a headache and/or a slight drop in your blood pressure. These symptoms usually last for a few minutes and go quickly.

### **What happens after?**

The sheath inserted to your radial artery will be removed at the end of the interventional procedure.

To stop the small hole in your radial artery from bleeding, the operator will put a compression wrist band or apply firm pressure onto your wrist or hand until the bleeding stops.

The compression wrist band will be left on for 1 hour after the procedure and will be decompressed gradually. You can move your arms and walk with the wrist band on during this time. The wrist band can then be removed if there is no sign of bleeding.

We will continue to observe you for a period of time. The length of observation period depends on the procedure you have undergone.

## Patient Information

### **What are the risks?**

#### **Access site bleeding**

The risk of bleeding from a transradial artery access is lower than that from a transfemoral artery access. Bleeding is usually at the small incision, or it can present as swelling over the access site.

#### **Infection**

The risk of bleeding from a transradial artery access is lower than that from a transfemoral artery access.

Access site infection can present as pain, swelling, skin redness, or discharge from your wound. This may need treatment with antibiotics or drainage of infection.

#### **Temporary radial artery spasm (4-16%)**

Your radial artery can go into spasm around the sheath inserted into your wrist or hand. If this happens, you may feel pain in your arm and moving the equipment through your artery will become difficult.

The spasm will normally resolve when you are more relaxed, with or without the help of sedation drugs. On rare occasions, general anaesthesia may be needed.

The radial artery cocktail, injected into your radial artery at the beginning of the procedure, helps to reduce the risk of radial artery spasm.

#### **Transient or permanent radial artery occlusion (4%)**

Your radial artery can become blocked due to a prolonged spasm of your artery or a blood clot forming in your artery.

This is usually temporary and will resolve without treatment. Occasionally, the blockage can be permanent.

## Patient Information

Transient or permanent radial artery occlusion does not normally cause reduced blood supply to your hand. This is because the blood supply will be taken over by the other artery (your ulnar artery). Your interventional radiologist will check both the radial artery and the ulnar artery before the procedure.

Radial artery occlusion can lead to reduced blood supply to your hand. This is very rare.

### **Reduced blood supply to hand (0.1%)**

This is a very rare complication from radial artery access. It is caused by severe vascular injury. Symptoms range from reduced sensation, reduced movement, loss of function or tissue loss in hand or fingers.

### **What to expect after artery access**

Mild swelling and bruising at the access site are normal. This should go away gradually over a couple of weeks.

You may have tenderness, discomfort, and pain at the access site. This should be mild and should improve over a few days. If this happens, take over-the-counter pain medicines.

You may experience some numbness or mild tingling in your hand after transradial artery access. This should go away over several hours.

### **What to do after your artery access procedure**

#### **Do:**

- ✓ keep the puncture site clean and dry for 24 hours
- ✓ you can take a shower after 24 hours. But make sure your wound is dry afterwards.
- ✓ put firm pressure on your puncture site immediately if you notice a small swelling or bleeding. Do this for at least 15 minutes.

## Patient Information

### **Do not:**

- × Do not drive for
  - for 3 days after transradial artery access
  - for 7 days after transfemoral artery access
- × Do not soak the artery access site in water for 5 days.
- × Do not use creams, lotions, powders, or ointments on the access site until fully healed.
- × After transradial artery access, avoid lifting, pushing, or pulling heavy objects with the hand that was used during the procedure for 3 days. Heavy objects are objects more than 3 kilos or 7 pounds. Avoid activities that require flexing the wrist for 3 days. This includes any kind of sports.  
  
After transfemoral artery access, avoid straining, lifting heavy objects and vigorous exercise for 1 week.
- × Avoid contact with dirty water.

### **Go to A&E immediately if:**

- the bleeding or swelling does not stop, or you notice a sudden increase in swelling, tightness, or severe bleeding from the wound. Apply firm pressure to your wrist, sit down and call 999.
- you have significant numbness or tingling in your hand (transradial) or leg/foot (transfemoral), especially if it is constant or gets worse.
- your hand or feet becomes cold, changes in colour and becomes more painful.

**Do not drive yourself to hospital.**

## **Contact details**

If you would like more information or have any questions, please contact the **Interventional Radiology Department:**

Phone: 024 7696 7115 or 024 7696 7075

Monday to Friday, 8am to 6pm

## Patient Information

The Trust has access to interpreting and translation services. If you need this Information in another language or format, please contact 024 7696 7115 and we will do our best to meet your needs.

The Trust operates a smoke-free policy.

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