



WESSEX CARDIOLOGY

Percutaneous Coronary Intervention  
Patient Information Leaflet

## **What is Percutaneous Coronary Intervention?**

It has been recommended that you have a procedure called Percutaneous Coronary Intervention. This involves a procedure called an **angioplasty/stent**. This will be explained later on in this leaflet. You may already have undergone a test called a coronary angiogram, or this may be included as the first part of this procedure. Coronary angiography studies the structure of the arteries that bring blood to the heart muscle (the coronary arteries) and shows where the narrowing or blockages in the coronary arteries are.

Each person is unique and therefore each person's condition will vary. This is general information about this procedure. If you have additional questions or concerns, please ask the staff.

## **What is Coronary artery disease?**

Atheroma/ cholesterol plaques can cause the narrowing of the arteries. Atheroma are fatty patches (cholesterol) or 'plaques', which develop within the inside lining of the arteries. This is similar to water pipes becoming 'furred up' with scale.

This can happen gradually over a number of years in one or more places in the arteries. Over time, these can worsen and cause enough narrowing of one or more of the arteries to cause symptoms. However there are some people who experience no chest pain, despite having narrowing in their coronary arteries.

## **What is angina?**

Angina is usually chest pain or discomfort that varies in severity for each individual patient. A narrowing of one or more of the coronary arteries usually causes it by reducing the blood supply to a part of your heart muscle.

This blood supply may be enough when you are resting, however your heart muscle needs more blood and oxygen when it has to work harder.

If the extra blood that your heart needs during exertion cannot get past the narrowed arteries, the heart 'complains' with symptoms such as chest pain.

**PLEASE BRING WITH YOU A LIST OF ALL YOUR MEDICATIONS.**

You will be asked to sign a consent form. In order to do this we will explain not only about the procedure but also mention some of the things that could go wrong. **We stress that the important complications are very rare.**

**Please feel free to ask any questions or raise any concerns that you have, as you will be asked to sign a consent form to confirm that you understand the procedure and agree to it being done.**

**SPECIAL INSTRUCTIONS BEFORE THE PROCEDURE:**

You cannot eat or drink for several hours before your angioplasty/stent. We will give you clear instructions before your procedure.

**DIABETIC PATIENTS:**

IF YOU TAKE A TABLET CALLED **METFORMIN** YOU WILL NEED TO STOP THIS FOR

**48 HRS before admission.**

Please inform the medical and nursing staff, on your admission to hospital, that you normally take this tablet.

**FOR THOSE ON INSULIN:**

**Take your usual doses of insulin the day before the procedure** then follow the instructions on your letter as to the time to fast/ be nil by mouth from on the day of the procedure.

**If you have been instructed to miss breakfast then do not take your morning dose of insulin and bring your insulin with you into hospital.**

**IT IS VERY IMPORTANT THAT ON ARRIVAL TO THE WARD, YOU TELL THE NURSE, THAT YOU ARE DIABETIC AND THAT YOU HAVE NOT HAD YOUR MORNING INSULIN.**

It is also very important that immediately after your procedure, on return to the ward, that you request food so that you can then take your dose of insulin.

**Please make advance arrangements for someone to take you home from the hospital the day after your procedure. You are not allowed to drive for one week following PCI.**

**YOU CANNOT DRIVE YOURSELF HOME.**

### **What the procedure involves...**

A team of cardiologists, registered nurses and technicians work closely together to provide your care.

It is their goal to make your experience as comfortable as possible.

The procedure takes place away from the ward area in an X-ray room called a catheterisation lab. During the procedure you are required to lie flat on a special X-ray bed, with a couple of pillows under your head. There will be a small X-ray machine positioned above your chest and a monitor and screens to the side of you. The room is kept cool but you are covered up with some sterile sheets that will cover you from neck to ankle.

You will be awake during the procedure, which takes around 30-40 minutes, although it may take longer if more than one coronary artery needs treating.

Sometimes a sedative can be given before the procedure if you are anxious.

The procedure is performed under local anaesthetic and you are given a mild sedation.

The staff will set up the equipment needed and clean the top area of your leg with an iodine solution. The doctor will then inject the local anaesthetic into the skin at the top of your leg, or in your wrist if that artery is to be used. This may sting a little at first but will take effect quickly to numb the area.

The doctor then places a small plastic tube, called a sheath, through the skin and into the artery.

The commonest artery to use is in the groin, but sometimes the artery in your wrist is used.

It is through this sheath that the doctor can insert a thin flexible catheter into the artery and advance it up towards the heart using X-ray guidance.

**You cannot feel the catheter inside the blood vessels. Some of the sensations you may feel are an occasional *missed* or *extra* heartbeat during the procedure and a warm flushing feeling throughout your body when the dye is injected. These feelings are normal and only last a few seconds. The staff will let you know when to expect these sensations.**

**It can be normal to experience chest tightness/ discomfort during the procedure, do let the staff know of any symptoms you are feeling so that they can relieve them straight away and make you more comfortable.**

X-ray screening is used to guide a catheter to the coronary artery containing the narrowing.

A very fine wire is then passed along the catheter into the artery and through the narrowed area. This acts as a "rail road" along which the balloons and stents can be passed.

A very thin "balloon catheter" is then passed down the guide catheter, along the wire. The balloon within the tip of this catheter is then inflated and deflated to squash the fatty plaque into the wall of the artery until an enlarged channel remains, enabling blood to flow through your artery more freely.

In nearly all cases a stent (small wire mesh tube) is then released from the tip of the balloon catheter. As the balloon is inflated the stent expands, so that it holds open the narrowed artery and helps to keep it open. This stays in place forever and cannot be removed.

Once the procedure has been completed, some dye will be injected down the coronary arteries to make sure that the procedure has been successful.

At the end of the procedure, the small tube in the artery is usually removed straight away.

If the leg artery was used then a small collagen plug (an angioseal) is used to seal the hole in the artery and is dissolvable.

Sometimes it is necessary to use a special pressure belt, called a femstop, which is applied to your leg until the bleeding has stopped. If your wrist artery is used then the tube is taken out straight away and pressure is applied to the wrist using a pressure band.

### **After the procedure:**

After the procedure you will then be taken back to the ward area and will need to continue to lie flat as directed by the nurses on the ward.

**During and after this procedure you will need to lie flat, keeping your head on the pillow and your leg straight, to allow the artery to heal.**

**The nurse looking after you will let you know when it is time to sit up.**

**You can eat and drink on return to the ward. It is important to drink plenty of water after this procedure to flush the dye through your system.**

**Occasionally** after this procedure some patients will return to the ward with an infusion/drip called 'reopro'. This will run for several hours and its purpose is to prevent the platelets in your blood 'sticking together' and so help to maintain blood flow through the stent.

During this infusion you will not be able to get out of bed and a blood test will be taken to monitor its effectiveness.

Most people go home the next day following angioplasty. Prior to discharge the doctor will give you the results and explain any changes or plans to your treatment.

**It is important to ask any questions you may have at this stage and about returning to work.**

### **Possible Complications:**

**It is important that you are aware that there can be some complications associated with this procedure.**

**Overall these procedures are extremely safe.**

**There is only one common complication.**

- You may notice a bruise or small lump at the puncture area. This can be normal and it may take some time to disappear. If any bleeding occurs it is important to lie flat and apply pressure to the puncture site for at least 10 minutes. If bleeding continues then ensure that you are taken to your nearest accident and emergency department.
- If you have any excessive swelling, bruising or redness, see your GP immediately.

**Although the following complications must be mentioned, the risk of them happening is very small.**

**Your doctor feels that the benefits that can be gained from performing this procedure far outweigh any of the risks involved.**

- There may be damage to the artery at the top of the leg, resulting in a large bruise and possible bleeding. This is called a False Femoral Aneurysm. Although applying extra pressure to the artery can treat this, approximately 1 in 500 people require further treatment, involving an injection or a small operation, under a general anaesthetic, in order to repair the artery. This would be done before we send you home.
- Palpitations or an irregular, rapid heartbeat may occur in 1 in 200 patients. The heartbeat normally returns to its natural rhythm, although sometimes extra treatment is required.
- A slow heartbeat may occur in some people. This can result in feeling faint and sick, and can easily be treated with medications.

-Approximately 1 in 1000 people having an angioplasty and stent will die because of the procedure. This can be caused by a heart attack, stroke, or abnormal heart rhythm.

- Heart attack and stroke that do not result in death, occurs in approximately 1 in 100 patients having an angioplasty and stent.
- If an emergency situation occurs during the procedure, we will do whatever is possible to treat it. Although extremely rare, this

may require urgent action such as an emergency bypass operation.

- There is a small risk of any stent that we put in clotting off. To avoid this we give you not only **aspirin** but also another tablet called **clopidogrel**.

These tablets are given to you before your procedure and are usually continued together for a minimum of 12 months after the procedure, and it is usually recommended that you take Aspirin forever.

**It is extremely important that you take the combination of Aspirin and Clopidogrel for the recommended time period.**

- Occasionally a scar tissue forms inside the stent and this can narrow down the artery and eventually cause the angina to come back, this is called restenosis.

Restenosis is rare these days, and can be treated. It occurs usually within the first six to 12 months.

### **X-ray exposure and radiation:**

The cardiac catheterisation test uses radiation in the form of X-rays to take pictures of the coronary arteries.

Radiation can be harmful to unborn babies. If you are a woman having this procedure then you must be absolutely sure that you are not pregnant. If there is any doubt, please ask the doctor.

The treatment carried out during the procedure and any plans for the future will be discussed with you prior to your discharge home. It is important that you raise any concerns with the doctor before you go home.

### **WORK:**

Return to work is dependent on your type of job and history before the procedure. We normally recommend at least 7 days off work after an angioplasty/stent procedure.

If more time is required off work it is advised that you see your GP for an extension.

## **ACTIVITY:**

Before you leave hospital post angioplasty/stent you should be seen by a cardiac rehabilitation nurse.

- Do not use your leg excessively. For example, do not climb stairs two at a time, ride a bike or stand for long periods, until the area is well healed and comfortable (approximately 2 weeks).
- Gradually increase your exercise over the next few weeks. For example walk a little further each day and do not try to do too much at first.

## **DRIVING:**

Do **not** attempt to drive yourself home.

If you have had an **Angioplasty or Stent**, you must not drive for at least **one week**. Driving can recommence provided there are no other disqualifying conditions. DVLA need not be notified.

Patients with LGV or PCV licences must inform the DVLA at Swansea and are disqualified from driving for at least 6 weeks. Re-licensing may be permitted thereafter, provided that the exercise test requirements can be met and there are no other disqualifying conditions.

## **FLYING:**

British Airways Health Services (2003) note that:

“In most cases travel can be contemplated within 3-5 days but individual assessment is required.”

However you may be advised to refrain from flying for up to 4 weeks by your cardiologist.

### **A final reminder**

**You may ask questions at any time.**

**Please do so if there is any thing you are unsure about.**

**CONTACT YOUR DOCTOR IF YOUR ANGINA ATTACKS BECOME MORE FREQUENT OR SEVERE. This IS ESPECIALLY IMPORTANT IF ANGINA DEVELOPS AT REST OR ON MINIMAL EXERTION.**