



## **Coronary Angioplasty and Stent insertion**

Also known as

## **Percutaneous Coronary Intervention (PCI)**

(**Note:** the information below is a general guide only)

Coronary angioplasty is also called percutaneous coronary intervention (PCI). It is a procedure very similar to Coronary Angiography (See HeartWest's information leaflet) and is used to unblock narrowed sections of the coronary arteries. Just like angiography, small catheters are passed through either your wrist or groin into the heart and then balloons are used to widen any narrowing and stents are used to keep it from collapsing.

### **Why do it?**

After performing Coronary Angiography, your cardiologist will recommend this procedure if needed in your particular circumstances. This usually means that Coronary Angiography has revealed narrowing in your coronary arteries, which can be treated, and the arteries unblocked by this procedure.

Most of the time people have angina and chest pains, which may get relieved after this procedure.

PCI can be done electively (as a planned procedure) or urgently in an emergency if there is a heart attack or some other cardiac emergency. A heart attack usually means that one of the coronary arteries on the heart is suddenly and completely blocked causing no blood flow down that artery, resulting in death of heart muscle tissue within few hours unless the blood flow is restored by urgent PCI.

### **Before the procedure:**

Please see HeartWest leaflet on Coronary Angiography as most of the details are similar.

Coronary Angioplasty / PCI is performed by Interventional Cardiologists. Its done in hospital in special operating room called Catheterization Laboratory (Cath Lab). You will make the decision to go ahead with Coronary Angioplasty / PCI in consultation with your cardiologist. He/she will explain the procedure and will get you to sign a consent form. Please make sure you ask any questions that you may have before you sign the consent. Occasionally the procedure is explained much earlier while consent is signed just before the procedure, which allows you to have time to think about it and ask questions.

Before you come to hospital, you may be asked to have other tests like blood tests, an electrocardiogram (ECG), and a chest X-ray.

You may be admitted to hospital the night before your Coronary Angioplasty / PCI, but most people are admitted the same day, usually two hours before the procedure. In most instances, patients will be discharged from hospital on the next day, staying in CCU overnight. You will not be allowed to drive back, so there should be arrangements for your transport back home.

You will be asked not to have anything to eat or drink for at least six hours prior to the procedure.

Once you arrive in the hospital, you will be greeted by the hospital staff and then given a bed. You may be asked to remove any jewellery that you might be wearing and to put on a hospital gown. You will be shaved in the area where the catheter will be inserted. An intravenous (iv) line will be inserted to administer IV fluids / medications as needed.

### **Are there any risks involved?**

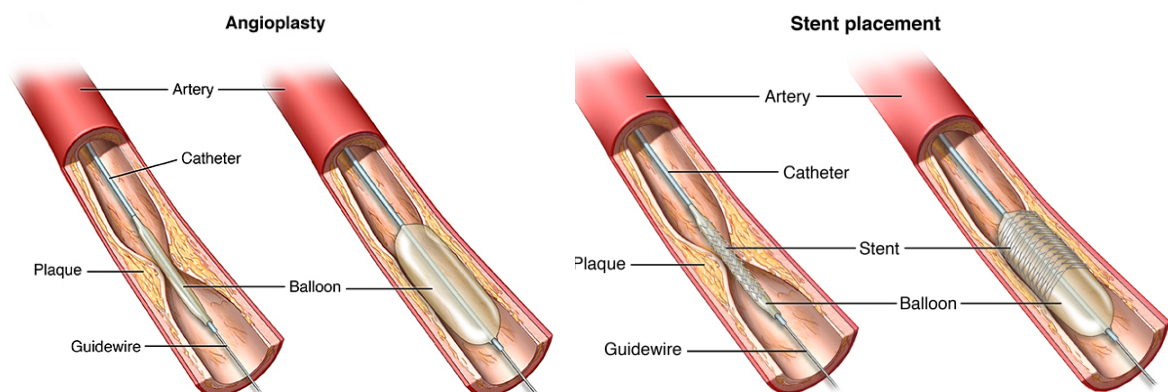
As Coronary Angioplasty / PCI is an invasive procedure, there are some risks. Your Cardiologist will explain these. However serious problems are uncommon. Most people have no trouble, and the benefits usually far outweigh the risks. It is outside the scope of this introduction to explain all the potential complications but you are encouraged to discuss these with your cardiologist and get clarification about any concerns that you may have about Coronary Angioplasty / PCI.

### **The procedure**

Just like Coronary angiography, Coronary Angioplasty / PCI is also done in special catheterization laboratories ('Cath-Labs') that look like operating theatres. The procedure involves X-Rays and injecting a special dye containing iodine into the blood vessels. You may feel hot when this dye is injected.

You will be taken to the Cath Lab and asked to lie on a narrow table, which can be moved in all directions during the test. You will be connected to a few monitoring devices and then the shaved parts (either your wrist, groin or both) will be cleaned and sterilized with special solution (which may feel cold). After that your whole body will be covered with sterile drapes.

You will be given mild sedation through intravenous drip to help you relax. Your cardiologist will then inject local anaesthetic into your wrist, arm or groin from where the catheter is to be inserted. A sheath will then be inserted into the artery at that point. Through this sheath various catheters, wires and instruments will be inserted, advanced to reach the heart and changed as required. Different catheters / wires / balloons and stents are used as needed to unblock the arteries as required. There is an X-Ray camera that moves around and records short movie clips of what the interventional cardiologist is doing inside your heart. Most people do not feel any pain or sensation during the procedure. There are no nerves inside your arteries, so you will not feel the movement of catheters or wires through your body. Some people have nausea or chest discomfort when the dye is injected, or when the balloon is inflated, but this does not last long.



When a narrowing which needs to be treated is identified, an extremely thin wire is then passed through this narrowing to lie beyond this narrowed area. On this wire a special collapsed balloon is then advanced and placed accurately within the narrowing. The balloon is then inflated causing the narrowed part to become wider. The balloon is then deflated and withdrawn but the wire stays. This is usually followed by advancing another special collapsed balloon, which has a metal stent on it. Stent is a metal mesh, which can expand to a predetermined size as balloon is inflated. Again this is placed within the narrowed part and balloon inflated. The stent expands and widens the artery. The balloon is then deflated and withdrawn leaving the stent embedded inside the artery. Once deployed stent cannot be moved again. Deployment is seen, confirmed and documented via the X-Ray clips recorded intermittently throughout the procedure.

If there are more blockages, same procedure is repeated to insert stents if needed. If there are many blockages, then procedure will have to be repeated after few days / weeks as the total dose of dye used and radiation involved can be too much for one sitting.

Total time taken for the procedure varies depending upon how many blockages are tackled and how complex and time consuming they are. Hence there is no accurate time prediction before hand.

### **After the Procedure:**

When the procedure is finished you will be taken to CCU and your heart monitored continuously for the next 24 hrs. The sheath through which the procedure was done may still be in your groin, which may be removed few hours later depending upon some blood results. After the sheath is pulled out your groin will be pressed for about 10 minutes to stop bleeding.

Bleeding from the procedure site can happen later as well. For this reason you will be given specific instructions on how to look after the area, what to avoid and what to look for.

If your heart is stable after 24 hrs you will be discharged home.

You should avoid any heavy activities such as lifting or straining for about a week until the small wound has healed.

You should not drive a car for one week after having an angioplasty / PCI unless permitted by your cardiologist. If you have a heavy / commercial licence, you should check with your cardiologist regarding going back to driving as per rules laid by Australian government.

You may get a bruise from where the procedure was performed. This is not serious but it may be slightly painful for a few days.

