

Information about Coronary angiography and/or PCI



ST. OLAVS HOSPITAL
TRONDHEIM UNIVERSITY HOSPITAL

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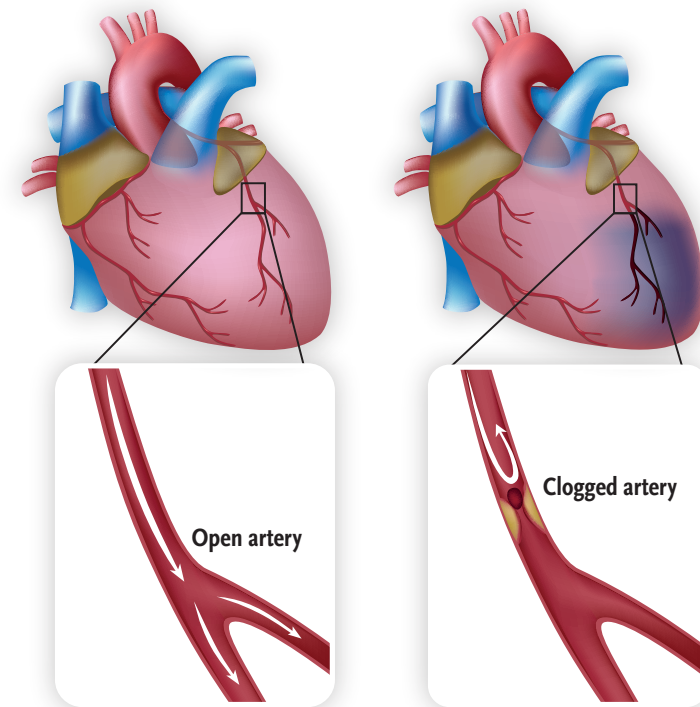
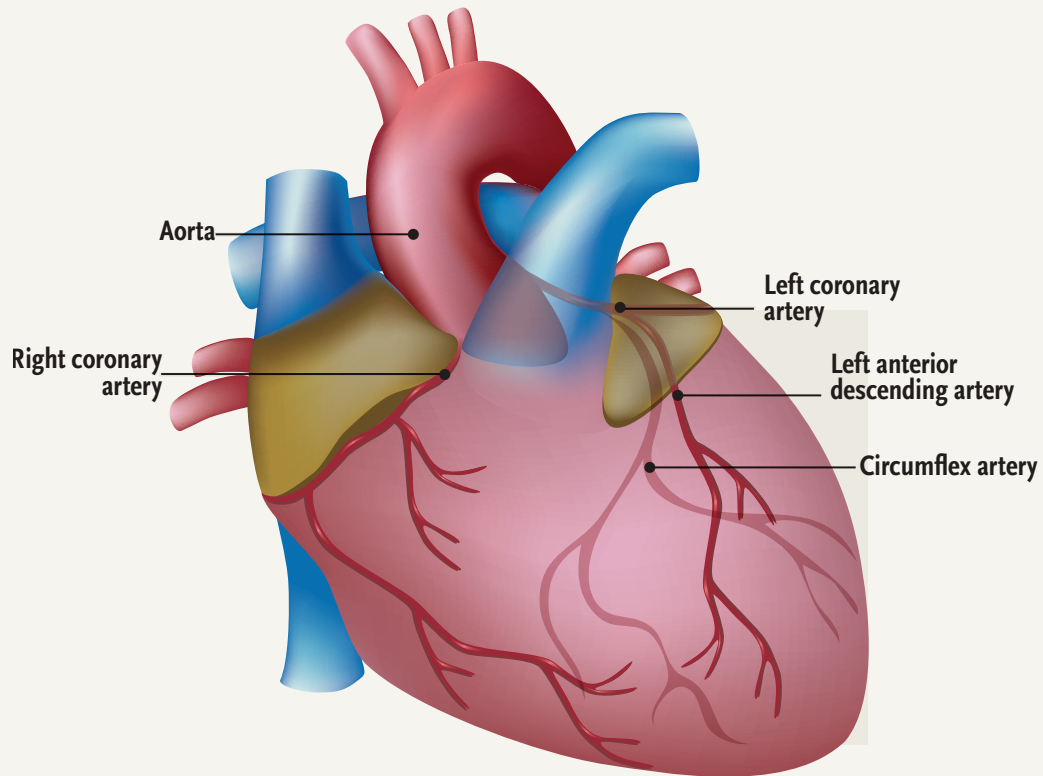
 **ST. OLAVS HOSPITAL**
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A little about heart disease

The heart

The heart is a muscle which ensures that all the organs of the body get oxygen-rich blood. The heart itself needs oxygen to function, and it gets this through the coronary arteries which lie on the surface of the heart.

Angina and a heart attack occur because of fat deposition in the coronary arteries of the heart. The process is called atherosclerosis. Most people, with increasing age, get such fat depositions to a greater or lesser extent but some people are more disposed to them than others.



Conditions which can speed up the atherosclerosis process are smoking, high blood pressure, high cholesterol, physical inactivity and diabetes. As well, there are other risk factors which cannot be modified, such as heredity, sex and age.

Angina Pectoris

A typical symptom of angina is a constricting pain in the centre of the chest.

The pain may radiate to the left arm or to both arms, between the shoulder blades, up towards the neck/throat/jaw or towards the upper part of the stomach. Other symptoms may be shortness of breath and/or tiredness.

Angina symptoms often occur because of physical exertion, psychological strain and stress. Narrowing of the coronary arteries reduces the flow of blood to the heart. This results in a lack of oxygen in the heart muscle, which again triggers chest pain (angina pectoris).

The symptoms are relieved when you slow down or rest. Nitroglycerine spray or a resorbable tablet under the tongue can alleviate angina pain. Nitroglycerine dilates the blood vessels of the heart, improving the delivery of oxygen.

Heart attack

In contrast to angina, the coronary artery is completely blocked when a heart attack occurs. When a blood clot completely stops the flow of blood, the muscle cells in that specific area of the heart die. Scar tissue is formed and the heart's ability to pump may be reduced.

When a heart attack occurs, it is very important to be given treatment as quickly as possible in order to avoid or to limit damage to the heart. Confusingly, the symptoms of a heart attack resemble those of angina, but the symptoms of a heart attack do not stop with rest or with intake of nitroglycerine. Other symptoms of a heart attack can be nausea, vomiting, cold sweats or shortness of breath. More diffuse symptoms such as tiredness may also manifest themselves. The degree of pain felt is not dependent on the size of the heart attack. For some people, a heart attack can occur entirely without pain (silent heart attack). A heart attack can occur without warning and at any time of the day or night.



What is coronary angiography?

Coronary angiography is an X-ray examination.

At coronary angiography the coronary arteries, which supply the heart with blood, are examined to see if there are any narrow parts.

The examination causes little discomfort and takes place at the Angiography Laboratory. You will lie on an examination table during the examination, and you are awake throughout the procedure.

A local anesthetic is given at the puncture site, which is either the artery at the wrist or the groin, before a catheter is threaded up the artery to the heart. The contrast agent is given via the catheter and any narrowing in the coronary arteries is visible on the X-ray film.

The examination takes about a half-hour to one hour. If the examination is followed by PCI, the procedure may take an extra half-hour to an hour.

The risk of complications at a coronary angiography is low. The most common complication is bleeding from the puncture site. The catheter may come into contact with atherosclerotic plaque, and dislodge small parts of the plaque. On rare occasions this may lead to a heart attack or a stroke. The overall risk for serious complications is approximately 0.5%



Before the procedure

Before you have a coronary angiography, some preparation is needed.

- You are given information about the procedure
- You should let the personnel know if you have previously reacted to any contrast agents used during an X-ray examination
- You should shower the evening before or the same morning as the examination if your condition allows
- You should remove nail varnish, make-up, watch, rings and jewellery
- You are allowed to eat small portions at all meals before the examination
- You receive your regular morning medication from a nurse, apart from
 - diuretics
 - blood thinners such as Marevan ® and Klexane ®
 - metformin (diabetic medication)
- If you have reduced kidney function, you will receive intravenous fluids beforehand
- You should empty your bladder before the examination
- Your blood pressure and pulse are taken
- An ECG is taken
- The nurse will shave your wrist and your groin if needed
- An intravenous cannula is inserted in your arm
- You are offered a tranquilliser in tablet form
- You are brought to the angiography laboratory in a wheelchair or in a bed wearing a hospital-issue shirt and your underpants.



During the procedure

During the examination you may notice:

- Pain and discomfort in your arm when the catheter is inserted
- A warm feeling when the contrast agent is given. On rare occasions a patient may also notice nausea, flickering before the eyes and a strange taste in the mouth
- Chest pains and shortness of breath
- Chest pain during PCI
- When the procedure is done from the groin, you may notice discomfort as the puncture site in the groin artery is being closed. You will get painkillers and tranquillisers if needed.



After the procedure

After the procedure you will return to the ward area. Here you will be under observation for some hours.

- Your blood pressure and pulse are taken regularly
- The point of vascular insertion is inspected
- You can drink straight away, and you can eat after one hour.

It is important to keep the wrist or the groin still after the procedure in order to avoid bleeding. It is not uncommon to experience pain, swelling and bleeding from the puncture site.

Puncture site at the wrist

- Pressure bandage for two to three hours
- Bed rest for one hour
- Arm in a sling for four to five hours

Puncture site in the groin closed with Angio-Seal

Angio-Seal is a collagen plug which dissolves by itself after some time. Bed rest for two to three hours

Puncture site in the groin not closed with Angio-Seal

Pressure bandage for three to four hours

Bed rest for five to six hours

It is important to lie flat during all this time; you must not lift the upper part of your body or lift your legs.

If the examination is followed by PCI, you will be under more intense observation for some hours afterwards. Then you will be transferred back to the ward.

Possible outcome of the procedure

In some cases the coronary angiography shows the coronary arteries to be normal. If disease is found in the coronary arteries, there are different treatments:

Drug treatment. The examination may show that it is unnecessary with any special treatment and that you are best served by drug treatment.

PCI. This can be carried out in one or several narrow sections of the coronary arteries in the same procedure as the angiography.

Heart operation. This can be an option if PCI is not suitable.

Heart-valve operation. This can be an option if the examination reveals a diseased heart valve

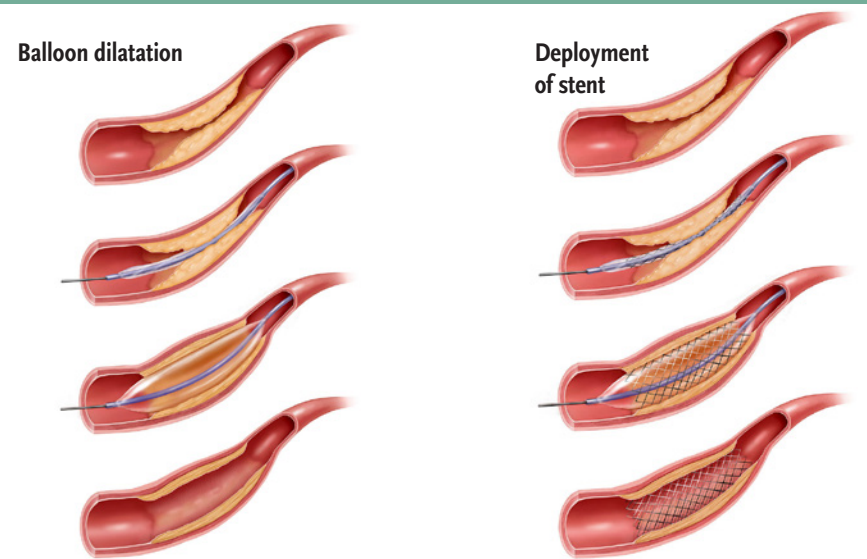


PCI – Percutaneous Coronary Intervention

PCI is a technique used to widen narrow areas in the heart's coronary arteries. A catheter with a balloon is fed through the narrow area in the coronary artery. Here the balloon is inflated and it widens the area. In order to keep the coronary artery open, a so-called stent – a metal grid formed like a cylinder – is often inserted.

Should you receive a stent, you will be given extra blood thinners, Plavix® or Brilique®, which prevent the formation of blood clots in the stent. This medicine is to be taken daily for a certain number of months. Your doctor will decide on the number of months.

A view of a narrowing of the coronary artery



Illustrations: LHL

What you must take into account after the procedure

- Keep a careful eye on the puncture site. Notify personnel if there is any sign of bleeding, swelling or if you are in pain. It is usual to have bruises around the puncture site. It can also be a little tender in the first few days.
- Keep the bandage dry.
- Shower as usual the day after the procedure. Change the bandage to avoid infection at the insertion point.
- Be careful lifting the two first days, regardless of puncture site.
- Be careful with physical activity the two first days after groin puncture.
- Contact your GP if you experience complications or problems after being discharged.



When you come home

Sick leave

If you have had PCI in connection with a heart attack or unstable angina, it is usual to have full or partial sick leave. This is evaluated individually.

Driving

- It is recommended that you do not drive a car the two first days after coronary angiography/PCI.
- With driving licenses other than class B, separate rules apply to temporary driving bans. Your doctor will inform you about these rules.

Sex

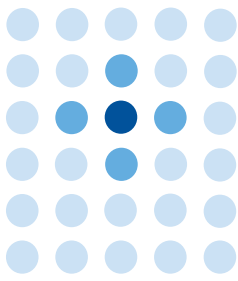
The physical effort of having sex is not very strenuous. You can have sex as soon as you feel ready for it.

Psychological reactions

It is normal to have emotional reactions in connection with heart disease. You may experience anxiety, irritation or general depression. Allow yourself to show your feelings. Fresh air, daylight, physical activity and social contact often help your mood.

Physical activity

- It is important that you keep yourself active when you have come home.
- If you have had PCI in connection with your heart attack or unstable angina, you ought to avoid hard physical work the first one to two weeks. In this period it is recommended that you go for walks at an easy tempo in relatively flat terrain; you should be able to talk as you walk. Avoid heavy activities such as clearing snow, mowing the lawn, chopping wood, etc.
- Research shows that it is very good for the heart that you are physically active. There are many ways to achieve this: Everything from trips in the woods to hard interval training is useful.



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