

Advice for patients undergoing coronary angioplasty and stents

The purpose of this leaflet is to provide you and your family with a full understanding of an angioplasty and/or a stent procedure.

Please remember that although this is a general guide about what is likely to happen, there will be differences from person to person.

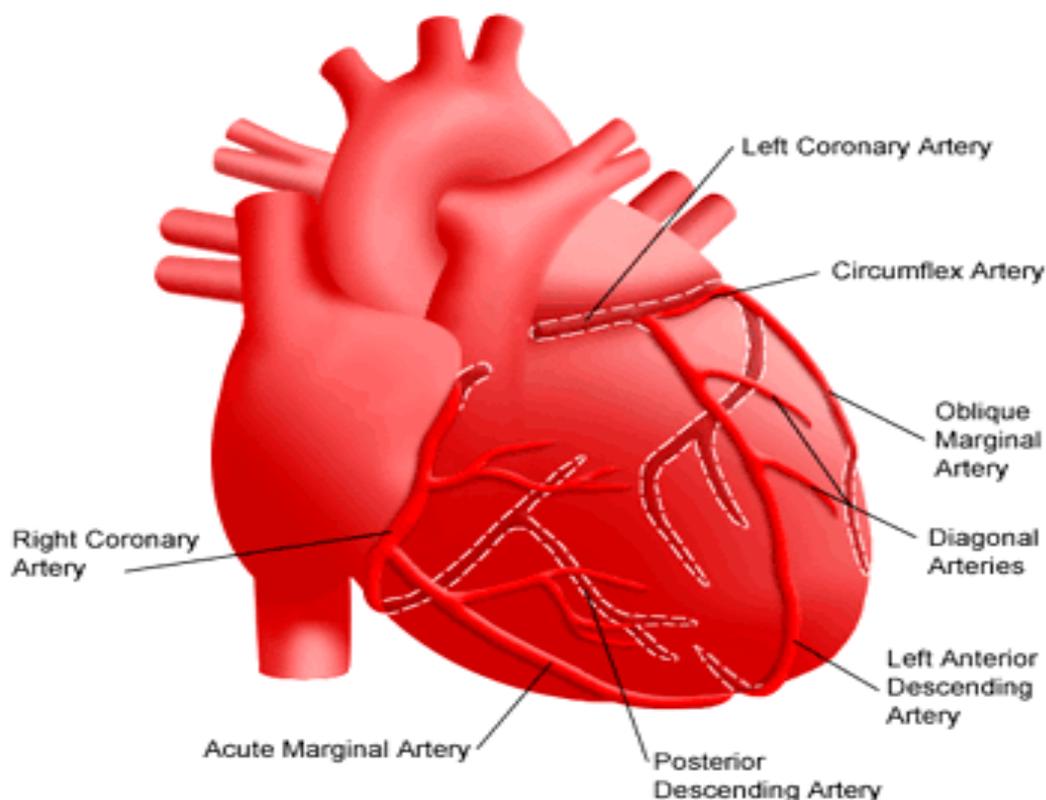
Any of the nurses and doctors who are looking after you will be happy to answer your questions and deal with any matters that may be worrying you. Please do not be afraid to ask.

Heart disease

The heart gets its blood supply from three main blood vessels called the coronary arteries. These arteries can become blocked or narrowed by the build up of a fatty substance known as atheroma, within the wall of the coronary artery, reducing the amount of blood getting through to the heart muscle. This may have caused you to have chest pain or breathlessness and may even have resulted in a heart attack.

The picture of the heart below shows the coronary arteries.

Coronary Arteries of the Heart



Angioplasty

For some people, one way of treating their particular heart problems is to widen or reopen the narrowed artery, which increases the blood supply to the heart. This technique is known as coronary angioplasty and is very effective in relieving angina symptoms.

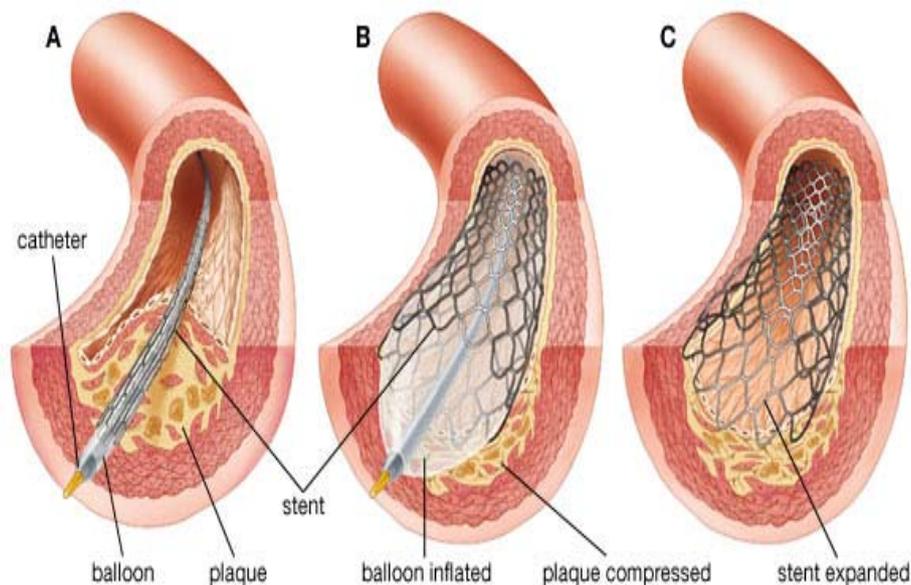
The angioplasty is usually carried out through an artery in either your groin, known as the femoral artery, or in the wrist called the radial artery. At the start of the angioplasty you will be offered some medication to relax you. A local anaesthetic will be given to numb the area, and a small cut is made to insert a thin tube into the artery.

The doctor uses X-ray screening to help direct the catheter to a coronary artery and contrast media (dye, a fluid that shows up on x-ray) is injected through the tube to locate the narrowed/blocked vessels. You may notice a hot flushing sensation and feel like you need to wee when the dye is injected.

Once the catheter (which has a small deflated balloon at the tip) is in position, the balloon is inflated and deflated flattening the fatty deposits that are narrowing the artery. This will make the blood vessel wider and improves the blood supply to the heart muscle. Once the narrowing is reduced, the deflated balloon catheter is removed.

It is common to experience some chest discomfort when the balloon is being inflated as it temporarily blocks the blood flow through the artery. This feeling should go away when the balloon is deflated. During the angioplasty you will be asked how you are feeling and it is very important to tell the doctor or nurse if you experience any pain or discomfort.

Angioplasty and stenting procedure



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Coronary stent

A stent is a cylinder-shaped, stainless steel mesh device that is placed in the coronary artery at the blocked area. Before the stent is inserted, a channel is created at the blockage, using a balloon angioplasty procedure. Another balloon with the stent attached to it is then inserted into the blocked area. As the balloon is inflated, the metal mesh expands. The expanded stent is pushed into the fatty deposits (plaque) moving it out of the way, so that oxygen rich blood can flow through.

The metal stent is very small and will not interfere with your life. For example, it will not set off alarms at airports or shops, nor will it move or rust.

Usually patients will have a 'drug eluting' stent. This is a stent which secretes a drug over a period of time to keep the artery open.

Over the following six to nine months a new lining (endothelium) grows over the stent so that it becomes part of the artery wall.

Are there any risks?

As with any heart procedure there are potential risks attached and they vary from person to person. Your doctor will explain these to you when you sign the consent form. It is important that you are aware of the potential complications before signing the consent form.

Rarely, treatments involving the coronary arteries are associated with complications such as stroke (0.5%), heart attack (1%) or death (0.2%).

There is a small risk (approximately 1%) of the narrowed artery becoming blocked during the procedure and it may be necessary to have urgent heart surgery.

Occasionally your doctor will not be entirely happy with the result of the balloon therapy. If this is the case he may feel that the cardiac surgery should be done and this will be arranged as an out patient.

There is a chance of re-occurrence of the narrowing following this procedure. In 4-20% of these cases it is possible that further chest pain may be experienced in the first four to six months following the procedure. If this is the case, further investigations may be recommended by your cardiologist. The balloon therapy can be repeated if necessary.

After the procedure

The procedure lasts approximately one to two hours. When finished you will be taken back to the ward and placed on a cardiac monitor.

If procedure is via the groin you will be required to lie flat in bed for four to six hours. This is because there is a plastic tube (called a sheath) in your groin which will be removed approximately four to six hours afterwards. The delay is to allow the blood thinning medication (anticoagulant) to wear off. When the tube has been removed the doctor or nurse has to apply pressure at the top of the leg to prevent the artery from bleeding. The artery has to be compressed for at least 20 minutes and can be rather uncomfortable, however sedation can be given. You will have to lie flat for further two hours to allow the wound around your groin to heal.

An arterial sealing device can be used in suitable cases. This allows for the sheath to be taken out quickly and means that you can sit up sooner. This plug will dissolve over the next 90 days and you will be given an advice card to carry.

The nurse looking after you, will regularly inspect your groin, check your blood pressure and check the pulses in your feet. Once you have settled back into the ward you will be given something to eat and drink.

If you have the procedure via the wrist, the sheath will be removed at the end of the procedure and compression applied to the radial artery for two to four hours, using a special arm band. You will be able to sit up during this time.

Going home

If there have not been any problems, most patients will be able to go home the same day or the day after the procedure. You will be expected to make your own transport arrangements for going home.

Tablets

You will be given two weeks' supply of tablets, and a letter for your GP explaining the procedure and listing your medication. Usually the doctor will not alter your cardiac medicine immediately after the angioplasty. If you bring your medicines in with you this can speed up your discharge from hospital, as you will not need a supply of tablets from pharmacy.

Following angioplasty and stent implantation you will be given an additional drug called an anti-platelet such as Clopidogrel (Plavix), Ticagrelor (Brilique) or Prasugrel (Effient). The duration of this is usually for **one year** post stent, however your consultant cardiologist will advise you on the duration of this medication as it may vary from patient to patient. This is until the artery wall covers the stent with a smooth lining of cells (endothelium) to help prevent clots from forming inside the newly inserted stent. As well as an anti-platelet you will continue to take Aspirin (life-long). You should also be given an advice card to carry with you.

Please read the information leaflets supplied with your medication. Always discuss your medication with the pharmacist or nurse before leaving hospital, so that any questions you may have can be answered.

Wound care

You will be given a wound care advice sheet.

In the highly unlikely event of your groin wound starting to bleed, you need to:

- lie down flat and apply pressure to your groin for at least ten minutes.

or

- get a family member or friend to apply pressure.

If the bleeding does not stop within ten minutes call an ambulance immediately.

If it is your **wrist** that starts bleeding:

- apply pressure above the wound at the wrist and raise your arm above your heart
- Apply the pressure for ten minutes

If the bleeding does not stop within ten minutes call an ambulance.

It is normal for your groin/wrist to feel tender for a few days after the procedure. A bruise may develop and extend as far down as your knee for the leg, and elbow for the arm. Only be concerned if a hard tender lump develops under the skin around the area of the incision site and contact CCU or cardiac rehab nurse (in office hours) if you are concerned regarding this.

If you have an artery sealing device inserted you may feel a small lump for approximately three months which is non tender.

Outpatients appointment

This is with your cardiologist, around 12 weeks after discharge and an appointment will be sent to you in the post.

You will also be followed up by the cardiac rehabilitation specialist in the interim to monitor your recovery and address individual risk and life-style management factors. You will be offered a clinic appointment and or cardiac rehabilitation group sessions at around four weeks.

What to do if you get chest pain

Following this procedure some people may experience pain or discomfort in the chest. This is not unusual because bruising can occur during the procedure. Over a period of time this will lessen and disappear altogether.

If you do get chest pain and think it is angina, sit down and try to relax. If the pain does not go away in a couple of minutes, do the following:

- Sit down and stop what you are doing
- Take one to two puffs of GTN spray under your tongue or into your mouth
- Wait for five minutes (still resting)
- If you still have pain take another one to two puffs
- Wait for another five minutes
- If you still have pain take another one to two puffs

If you still have chest pain after fifteen minutes despite taking the GTN then dial 999 for an ambulance. The spray should be carried with you at all times.

The main side effects of the spray are headaches, flushing and dizziness; these are usually temporary and disappear after a few minutes.

Please do not use this spray if you have just taken Viagra.

Do not drive whilst experiencing chest pain and ensure the pain has gone before resuming your normal activities. If you are becoming more dependent on the spray on a daily basis, talk to your GP as you may need a change of medication.

Activity

Please remember the following information should be used as a guide only, everyone is different. You may be given individual advice from your cardiologist or cardiac rehabilitation specialist.

There are not many things you should avoid doing, however for the first few days you are advised not to do any strenuous exercise, such as lifting heavy objects e.g. shopping or excessive pulling or pushing for example cutting the grass, digging the garden, shovelling and vacuuming.

Give yourself a week or two to get your strength back before returning to your everyday activities. A good starting point is to take regular walks that you increase on a daily basis. You

do not have to avoid climbing the stairs or walking up hills just take them slowly and steadily at first. After this period you should be back doing the things you used to do and you may even find that you can do more if your angina or breathlessness was holding you back before.

Driving

You are not legally allowed to drive for one week after this procedure Group 1 (Car / Motorcycle) licence holders.

If you hold a Group 2 licence (Bus / Lorry / Taxi), you will be required to undergo an exercise test in order to regain your licence. **This cannot take place until six weeks post stent at the earliest.** This fact will need to be discussed with your employer, GP and cardiologist. The same applies to train drivers and pilots.

If you get angina whilst driving, you must discuss this with your GP. **You must not drive if you are experiencing symptoms at the wheel.** You may resume driving once adequate symptom control has been achieved

Work

This will depend on many factors such as the overall state of your health and the type of work you do. If you have been working up to the time of your angioplasty you should be able to return to work in a week or so. You might like to discuss this in more detail with your cardiologist, cardiac rehabilitation specialist or GP.

Holidays and air travel

Most cardiologist agree that It is usually safe for you to fly to any destination 10 days after your treatment, provided you have not had any complications and you are the passenger not the pilot!

However the airline recommendations legally allow you to travel three days after a stent., with your cardiologist approval. We suggest you discuss this with your cardiologist to obtain his specialist advice if you need to travel this soon after your stent.

When booking your holiday, take out holiday insurance and discuss any special requirements with the travel agent or airline. If you are travelling to the European Union (EU) countries you should obtain an E111 from www.gov.uk/european-health-insurance-card

It is not a good idea to carry heavy cases for long distances so take advantage of any help that is offered at the airport or hotel.

Resuming your sex life

You and your partner may be worried that sex will put the heart under a great deal of strain and cause some damage. These fears are understandable but research shows that sex is no different from any other form of exercise and that the physical effort needed during sexual intercourse is no greater than when climbing a flight of stairs. You may therefore return to your normal sexual relationship when you and your partner feel ready. Generally once you are managing everyday activities comfortably you can safely resume your sex life.

Risk factors

We know that certain factors make coronary heart disease more likely to develop. These are called risk factors. There are risk factors that you can do nothing about (non-modifiable) and

those that you **can** do something about (modifiable). Improvements in health and the reduction of modifiable risk factors are part of managing your condition long term.

Non-modifiable

Family History

- Heart disease runs in families.
- If one parent has disease then the risk is 15% greater than if they had not.
- If both parents developed early heart disease then the risk increases to 50%.

Age

- Coronary heart disease risk increases as we become older.

Gender

- Men are more likely to suffer from heart disease earlier than premenopausal women.

Ethnic Origin

- There is a known higher risk in the Asian and South Asian populations.

Body Shape

- Apple shape (high waist/hip ratio)

Diabetes

Modifiable

Smoking

Smoking is the most significant preventable risk factor. The risk of heart disease in smokers is twice that of a non-smoker.

Smoking increases the thickness of the blood and roughens the artery lining. It increases blood pressure and speeds up the heart. It also increases cholesterol levels.

From the moment you stop smoking the risk of having a heart attack declines by 50% within the first year of stopping.

It is never too late to give up smoking!

Cholesterol

If cholesterol levels are too high it causes the arteries supplying the heart muscle to furl up and narrow (develop cardio-vascular disease). Cholesterol is manufactured by the liver and absorbed from dietary intake of saturated fats.. Blood cholesterol can be reduced by medication, healthy diet and life-style. Guidelines for cholesterol levels for those with cardiovascular disease are lower than the general population (Total 4 mmol/L or less LDL 2 mmol/L or less). There is also research evidence that statins lower heart attacks and strokes even in those with apparently normal cholesterol levels. Your cardiologist and cardiac rehabilitation specialist will discuss your individual case and recommendations.

High blood pressure

In 90% of patients with high blood pressure (BP) the cause is unknown. It is recommended that BP should ideally be below 140/85mmHg on average. If you have diabetes it is recommended that your BP should be below 130/80mmHg.

A high BP results in the heart having to use more energy in pumping blood around the body. It also damages the inside lining of the arteries. It is important to have your BP checked regularly by your GP or Practice Nurse.

Diabetes

Although diabetes itself is a non modifiable risk factor, diabetes control can be modified. If good control is achieved this can reduce the risk of further problems. Aim for HbA1c levels of around 48 mmol/mol (6.5%) and ask for advice from your GP and your diabetes consultant or nurse specialist.

Stress

Stress is often hard to assess. However patients often attribute developing cardio-vascular disease or having a heart attack to stress. Stress increases the heart rate and blood pressure and the blood becomes more likely to clot. The most important factor is to recognise when you are stressed and take appropriate action such as using relaxation techniques, aromatherapy, listening to music and taking exercise which are all useful in managing stress. Managing stress levels is an important factor in your ongoing heart health and well being.

Inactivity

Regular exercise is good for your heart and is part of the treatment of your cardio-vascular disease. Research has shown that patients who exercise regularly dramatically reduce their risk of further cardiac illness and serious complications.

Exercise stimulates small arteries in the heart to grow and take over the work of the blocked or narrowed arteries. Exercise improves all of the above risk factors and reduces symptoms. It increases confidence and morale which makes day to day life more enjoyable.

Increased weight (BMI over 30) and waist circumference (80 cm/ 31.5 ins in women 94 cm / 37 ins in men)

Your body shape and being overweight increases your risk of developing health problems such as raised blood pressure, high cholesterol and diabetes and therefore your overall risk of cardio-vascular disease. Losing weight is not always easy, so it is important to be motivated and set realistic goals. A reduction in weight / waist circumference can reduce blood pressure, reduce cholesterol levels, reduce the risk of developing diabetes and improve blood sugar control.

Alcohol Intake

Evidence suggests that any level of alcohol intake can increase the risk of ill health especially all cancers. Specifically for the heart drinking too much alcohol can:

- Increase your blood pressure
- Affect your cholesterol level by increasing triglycerides.
- Make you gain weight
- Increase blood sugar levels (diabetics)

Recommended levels are: 14 units per week with no more than 2 units in any one day with at least 2 days alcohol free. A guide to units follows.



Units. They all add up.



Cardiac rehabilitation

You will be visited or contacted by a Cardiac Rehabilitation Specialist Nurse, whose role includes:

- Information giving.
- Support for you and your family/next of kin.
- Risk factor assessment.
- Supporting your individual lifestyle changes.
- Education.
- Outpatient exercise and health education programme.

Your cardiac rehabilitation nurse will follow you up by telephone contact once you are discharged home. You are also encouraged to contact the cardiac rehabilitation team with any

questions or concerns you or your family may have in order to support your recovery and arrange your rehabilitation programme.

The cardiac rehabilitation programme is an ideal chance for you to maximise your exercise capacity, to increase confidence and to gain information about staying healthy and modifying your risk factors. It is also helpful to meet with other people who have been through a similar experience to you. Our aim is to cater for all and tailor programmes individually.

Your cardiac rehabilitation nurse is

The rehabilitation programme usually involves attending group sessions weekly for a period of time according to what is available for your area. Your cardiac rehabilitation nurse will discuss

with you your individual exercise plan and arrange your sessions either group, clinic or home based.

Useful telephone numbers

Conquest

Conquest Hospital.....	01424 755255
Cardiac Rehabilitation Nurses.....	01424 757565
Heart Function Nurse.....	01424 755255 ext 8431
James Ward.....	01424 758038 ext 2745
Coronary Care Unit.....	01424 758046 ext 8436
Baird Ward.....	01424 758029 ext 2745
Cardiac Department.....	01424 755255 ext 8029
Pharmacy Medicines Information.....	01424 755255 ext 7067
Diabetes Specialist Nurse.....	01424 755255 ext 6467
Heart Support Group.....	07815 667228 (Hastings)

Eastbourne

Cardiac Rehabilitation Nurses.....	01323 417400 ext 6238
Coronary Care Unit.....	01323 417400 ext 6634
Berwick Ward.....	01323 417400 ext 3568
Cardiac Department.....	01323 417400 ext 4742
Pharmacy Medicines Information.....	01323 417400 ext 3785
District Diabetes Centre.....	01323 414902
Heart Support Group.....	01323 722015 (Eastbourne) 01323 449155 (Hailsham/Heathfield)

Diabetes UK.....	0345 123 2399
British Heart Foundation Helpline.....	0300 330 3311
NHS Smoking Helpline.....	0800 622 6968

Consent

Although you consent for this treatment, you may at any time after that withdraw such consent. Please discuss this with your medical team.

Important Information

The information in this leaflet is for guidance purposes only and is not provided to replace professional clinical advice from a qualified practitioner.

Your comments

We are always interested to hear your views about our leaflets. If you have any comments, please contact the Patient Experience Team – Tel: (01323) 417400 Ext: 5860 or by email at: esh-tr.patientexperience@nhs.net

Hand hygiene

The Trust is committed to maintaining a clean, safe environment. Hand hygiene is very important in controlling infection. Alcohol gel is widely available at the patient bedside for staff use and at the entrance of each clinical area for visitors to clean their hands before and after entering.

Other formats

If you require any of the Trust leaflets in alternative formats, such as large print or alternative languages, please contact the Equality and Human Rights Department.

Tel: 01424 755255 Ext: 2620

After reading this information are there any questions you would like to ask? Please list below and ask your nurse or doctor.

Reference

This leaflet was compiled using up to date relevant clinical guidelines and information by Cardiac Rehabilitation Specialist Nurses: Phillippa Acton and Clare Baker

The following clinicians have been consulted and agreed this patient information:
Cardiologists: Dr Nik Patel and Dr David Walker

The clinical group that have agreed this patient information leaflet: Cardio-Vascular Medicine

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