Living with coronary heart disease

Cardiac Rehab Team
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Salisbury NHS Foundation Trust

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Date written: 2009
Last revised: November 2015
Review date: November 2018
Version: 3.0
Code: PI1315

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You are entitled to a copy of any letter we write about you. Please ask if you want one when you come to the hospital.

The evidence used in the preparation of this leaflet is available on request. Please email patient.information@salisbury.nhs.uk if you would like a reference list.

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Cardiac Rehabilitation

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Plaque: The fatty area of atheroma in the artery wall is called a plaque.

Primary Percutaneous Coronary Intervention (PPCI): When angioplasty is done as an emergency this is called PPCI.

Revascularisation: This is a procedure to widen blocked arteries also known as angioplasty and stenting. Coronary artery graft is another form of revascularisation.

Secondary Prevention: Measures taken to prevent another cardiac event and keep your heart healthy.

Stent: This is a short tube of stainless mesh used to keep an artery open.

Thrombolysis: A ‘clot-busting’ drug given to dissolve a clot in the artery.

Troponin: An enzyme released into the blood when heart muscle is damaged.

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The heart

The body contains roughly 5 litres (8 pints) of blood which is continuously re-circulated by the heart. The heart beats approximately 100,000 times a day and pumps some 5,000 gallons of blood. Like all muscles, the heart needs a good supply of oxygen-rich blood to maintain this performance. It receives its blood supply from the coronary arteries.

The heart consists of 2 separate pumps, which work together. The right side receives blood, which has little oxygen and pumps it to the lungs where the blood is filled with oxygen. The left side receives this oxygen-rich blood and pumps it to the rest of the body.

Damage to the heart muscle occurs when the blood flow through one or more of these coronary arteries becomes reduced or blocked. This happens as a result of narrowing (atherosclerosis) or a blood clot, causing pain or discomfort in varying degrees. Urgent treatment is needed to prevent the heart muscle being damaged further.
If you think you might be having a heart attack

This information is included not because it is likely to happen but just to help you to know what to do if it did.

**Step 1:** If the pain is tolerable: Sit down, try to relax. If the pain is intolerable go straight to step 2.

If you have a glyceryl trinitrate (GTN) spray use it. Wait for 5 minutes. If the pain subsides it might have been an angina attack and you should tell your GP.

If pain is still present after 5 minutes use the spray again then wait another 5 minutes.

If after 10 minutes the pain is still present or is getting worse use the spray once more. If the pain does not subside or increases then you need to get immediate help.

**Step 2:** DIAL 999 ask for an ambulance and tell them you think you are having a heart attack.

**Step 3:** Make sure an outside door is left unlocked so that the ambulance crew can get in to you.

**Step 4:** Sit in a comfortable position. Try to stay calm and wait for the ambulance.

*Do not attempt to drive to the hospital yourself*

After experiencing heart problems it is quite usual to be more aware of feelings and sensations in your chest, and to notice your pulse or heartbeat more. This is quite common and it is important not to get too worried about this as it can make the feeling worse. It is normal for your heartbeat to speed up if you are taking exercise, or if you are a little anxious or worried.

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**Glossary**

**Angina:** Lack of oxygen rich blood to the heart muscle causing chest pain

**Angiogram:** An examination of the coronary arteries using a dye visible on x-ray.

**Angioplasty:** This is a procedure using a catheter with a balloon to open and widen the artery and insert a stent at the same time.

**Atheroma:** Fatty material that can build up within the walls of the arteries.

**Atherosclerosis:** Narrowing of the coronary arteries caused by atheroma.

**Cath Lab:** This is where an angiogram/angioplasty takes place.

**Catheter:** A fine flexible hollow tube with a small inflatable balloon at its tip.

**Coronary Arteries:** The arteries that supply blood to the heart muscle.

**Coronary Heart Disease:** Narrowing of the coronaries caused by atheroma reducing the blood supply to the heart muscle.

**Coronary Artery Bypass Graft (CABG):** This is an operation to bypass a blocked coronary artery using an artery or vein from another part of the body.

**Myocardial Infarction:** This is another name for a heart attack. This happens when a narrowed coronary artery is blocked by a clot.

**Percutaneous Coronary Intervention (PCI):** This is a procedure that widens a narrowed coronary artery, using specialised catheters.
**Useful contact numbers**

Salisbury District Hospital: 01722 336262

Cardiac Rehab ext 4847 (24hr Answerphone)

Tisbury/CCU Ward ext 4187 or 4140

Customer Care Salisbury Hospital ext 2764 or freephone 0800 374208

British Heart Foundation: 020 7554 0000
Heart Helpline: 0300 330 3311
Website: bhf.org.uk

Driver and Vehicle Licensing Agency (DVLA)
0300 790 6806 (Ordinary Licence) or
0300 790 6807 (Heavy Goods Vehicle)

NHS Smoking Helpline: 0800 022 4 332
www.smokefree.nhs.uk
Quitline: 0800 00 22 00
www.quit.org.uk

Anxiety UK helpline 08444 775774
(open 9.30am to 5.30pm Monday to Friday)
Website: anxietyuk.org.uk

**Information sourced from**

British Heart Foundation Publications 2011
The Healthy Heart Book (British association for Cardiovascular Prevention and Rehabilitation)
Living with Coronary Heart Disease (Information Booklet Salisbury 2009)
The Foods Standards Agency
Dorset Heart Centre (Bournemouth Cardiac Rehabilitation)

**Risk factors**

Risk factors are the things that can increase a person’s likelihood of getting coronary artery disease. For most people there is a reason why coronary heart disease has occurred.

There are some risk factors for coronary heart disease which are known as non-modifiable. This means that unfortunately there is nothing you can do about them.

These include:
- family history
- age
- ethnic origin
- gender.

There are other risk factors listed overleaf that are modifiable which means that you can do something about them. This is called secondary prevention.

Modifiable risk factors for coronary heart disease are:
- smoking
- diabetes
- high blood pressure
- unhealthy diet
- being overweight
- lack of exercise
- stress and anxiety
- high cholesterol level
- drinking too much alcohol.
Smoking
Smoking is one of the highest risk factors for coronary artery disease. Although it may not be easy to give up, it is one of the most important lifestyle changes you can make.

Furthermore, if you give up smoking you halve the likelihood of having a further heart attack or suffering from angina. To put it another way, if you continue to smoke after a heart attack you double the chances of having another one.

Help for smokers who want to quit
The NHS has free stop smoking services all over the country staffed by trained Stop Smoking Advisors in a range of venues at times to suit you. You can join a group where local smokers meet once a week, or have one-to-one support. It is usual to go for a few weeks and work towards a quit date. Find your nearest NHS Stop Smoking Service from the NHS Smoke free website:

www.nhs.uk/smokefree
email: NHSstopsmoking@wiltshire.nhs.uk
☎️ 01380 733891

Healthy eating
It is very important to eat a balanced diet to help you get healthy and stay healthy.

Research has shown that eating a ‘Mediterranean-style’ diet can help to keep your heart healthy. A typical Mediterranean diet has lots of fruit, vegetables, beans cereals and whole foods such as wholegrain bread, pasta and rice. It contains moderate amounts of fish, white meat and some low-fat dairy foods with lesser amounts of red meat and sweet desserts. Unsaturated fats like olive oil are used instead of saturated fats such as butter. Ask your nurse if you would

Remember
Have your blood pressure and cholesterol checked regularly. Make sure you ask your doctor how often you should have yours checked as this varies between patients.

If you forget or are at all confused by any advice you have been given, you must go back and ask, never be embarrassed about doing so.

Cardiac rehabilitation
Cardiac rehabilitation (or cardiac rehab) is a programme of education and exercise sessions that aims to help people with various heart conditions to improve their lifestyle and heart health. Cardiac rehab is not compulsory but taking part has been shown to reduce the risk of further cardiac events and help reduce some of the risk factors for coronary heart disease.

Episodes of low mood and anxiety are common after heart problems. Attending cardiac rehab classes and meeting up with other people who have been through similar experiences can greatly help to get your confidence back.

The cardiac rehabilitation programme takes place at:

Salisbury District Hospital with the rehab team also covering Rehab Clinics in the Salisbury community and The Abbey View Medical Centre in Shaftesbury, Dorset.
Going back to work
Most people will be able to return to their previous job within 4 to 6 weeks of a heart attack. How soon you return depends on the treatment you have had and how well you are recovering. It also depends on the type of work you do.

Secondary prevention
It is very important to keep your heart healthy after a heart attack. Having one heart attack increases your risk of having another. That is why it is so important to make lifestyle changes besides taking medicines to reduce the risk of it happening again.

The National Institute for Clinical Excellence (NICE) set the guidelines for these targets in terms of medication and lifestyle changes. These offer the best outcomes for patients.

Lifestyle targets:
- if you smoke - stop completely
- eat a healthy well balanced ‘Mediterranean style’ diet
- keep physically active. Moderate intensity exercise for 30 minutes, five times a week
- keep to a healthy weight and body shape.

Targets requiring medication and /or lifestyle changes:
- control high blood pressure: 130/80 or lower
- control high cholesterol: 4mmol / litre or lower
- If you have diabetes control your blood sugar by carefully following your doctor’s guidance.
- Take your prescribed medicines as directed.

Important steps
Eat more of what is good for you:
- 5 portions (at least) (a portion = a handful) of fruit and vegetables every day
- to get essential vitamins, fill up on high-fibre foods such as cereals, wholemeal bread, brown rice, beans and wholemeal pasta.

Eat less fat:
- especially animal (saturated) fat, butter, cheese, full-fat milk, pies, pasties, processed meat, biscuits & cakes.

Saturated fats can increase the amount of bad cholesterol (known as LDL) in the blood which can increase the risks of having coronary heart disease.

Cut down on salt:
Most people eat more salt than the human body needs. Having too much salt can increase blood pressure.
- don’t add salt to cooking instead try adding spices
- try to restrict very salty snacks such as crisps, cheese, smoked foods and salted nuts
- do not have a salt cellar on the table
- eat more fresh non-processed food.

Note: Avoid salt substitutes such as Lo Salt, as they are not always suitable for people with heart conditions.
Alcohol

- men should not regularly drink more than 3-4 units a day.
- women should not regularly drink more than 2-3 units a day.
- drinking too much alcohol can cause abnormal heart rhythms, high blood pressure, and damage to the heart muscle.
- alcohol is also very high in calories so it can lead to weight gain if taken in excess.

If you do drink everyday, try having a day free and if possible aim for at least 2 alcohol-free days a week.

Alcohol units

We’re supposed to be keeping an eye on how much we drink, but do we really know what a unit of alcohol is?

It’s easy to get confused with so many different drinks and glass sizes.

Units are a simple way of expressing the quantity of pure alcohol in a drink. One unit equals 10mls or 8g of pure alcohol, which is around the amount of alcohol an average adult can process in an hour. In theory this means that if you had a drink containing one unit your body should have little or no alcohol left in the blood after an hour although this will vary from person to person.

The number of units in a drink is based on the size of the drink as well as its alcohol strength.

- don't exercise straight after eating. Allow 2 hours after a heavy meal. If it is very cold or hot you may not be able to walk as far or as fast as usual
- don't exercise if you feel unwell or tired. Rest is important after a heart attack. It is better to lie down rather than dozing in the chair. Have a rest after a meal
- don't lift heavy objects such as shopping bags, vacuum cleaners, children, furniture. Avoid heavy gardening, digging, pulling or pushing objects that are stuck, or using your arms above your shoulders for long periods.
- housework and gardening. You can start doing light gardening, housework, preparing meals, washing up, cooking, as you feel fit and able. Don't stand for long periods.
- resume sexual activity. Usually after about 4 weeks but some couples may prefer to wait longer. After a heart attack people worry about how sex will affect the heart. Sex is just as safe as any other form of physical activity or exercise. If you have any difficulties talk to your GP or cardiac rehabilitation nurse
- driving. You are not allowed to drive: After a heart attack - for 1 month After successful angioplasty - for 1 week After heart surgery - for 4 weeks

If you have any queries about driving contact the DVLA. Either:

- visit www.direct.gov.uk/driverhealth
- or call the DVLA on 0300 790 6806

You will also need to inform your insurance company about your heart condition.
Everyone has different levels of fitness and mobility before a heart attack. This will affect your recovery and therefore it is important to LISTEN to your body.

If you are tired - rest
If anything causes you pain - stop
If you are too short of breath to talk - stop

If you have not had a heart attack but have had stents inserted you will probably return to your normal activities more quickly.

Guidelines for the first 4 weeks after a heart attack

Follow the guidelines BUT always listen to your body. Do NOT do too much too soon.

- **have a routine.** Get up, wash and dress, Don’t stay in bed all day. It’s not good for body or mind
- **don’t sit for long periods.** Stand up and walk from room to room, or go for a gentle walk outside if the weather is good
- **use the stairs.** If you could do stairs before your heart event then you will likely be able to do them after. Just take them at a gentle pace don’t push it so that you are breathing heavily
- **go for a walk every day.** Walking is one of the most natural and easy forms of exercise. Start gradually aiming to do a little bit more each day. Start with 5 to 10 minutes in the first week gradually building up to 30 minutes brisk walking at the end of 4 weeks. Try to keep on the flat as much as possible for the first 2 weeks

### Calculating units

Using units is a simpler way of representing a drink’s alcohol content which is usually expressed by the standard measure ABV which stands for alcohol by volume.

ABV is a measure of the amount of pure alcohol as a percentage of the total volume of liquid on a drink.

Most drinks now contains unit information on the back label helping you choose lower alcohol options and to know how many units are in a typical glass as well as the whole container.

There is an online UNIT CALCULATOR to see how many units (and calories) your favourite drinks contain:

www.drinkaware.co.uk/understand-your-drinking/unit-calculator

Men should not regularly drink more than 3-4 units a day.
Women should not regularly drink more than 2-3 units a day.
What is coronary heart disease? (CHD)

The coronary arteries are the arteries that supply the heart muscle itself with oxygen. Heart muscle is also called cardiac muscle. When the inside of a coronary artery becomes narrowed as a result of a build-up of fatty material (called atheroma or plaque), it can reduce the blood supply to the heart muscle. The poor blood supply to the heart muscle means it isn’t getting enough oxygen and this can cause the chest pain we call angina.

Angina

The symptoms of angina are any of the following:

• chest ache or pain, or indigestion-like pain
• heaviness or tightness in the chest
• pressure in the chest
• dull ache in the chest, jaw, arms or back
• breathlessness
• tingling down the arm and fingers.

It is important for people to realise that angina can be mistaken for indigestion.

Stable angina

Stable angina is predictable and can be controlled well with medicines. Stable angina comes on with a certain intensity of exercise and usually eases when you rest. It rarely lasts longer than 15 minutes. If you already have a diagnosis of angina your doctor will probably have prescribed Glyceryl Trinitrate Spray (GTN). This spray can be used if you know a particular activity will bring on an angina attack.

• an outpatient follow up will be sent to you for a 6-8 weeks appointment

After you leave hospital

It is good to be home again after being in hospital. However, you may feel worried and unsure once you leave the safe environment of the hospital. It is best you have someone at home with you for the first few days,

Take things easy for the first few days. You should be contacted by a cardiac rehab nurse one week after discharge. If you have any worries or concerns you can contact cardiac rehab on 01722 336262  ext 4847.

First 2 weeks after discharge

It is normal to feel unsure about what you can or can’t do after discharge from hospital. It takes time to come to terms with what has happened to you especially if you were well until this point.

You will have good days and bad and a range of emotions which can be difficult to understand. This is a normal reaction for many people to the stress of a major event in their lives.

Many people find they tire more easily in the first few weeks after a heart attack. This is normal and will usually pass as your strength and confidence return. As the days and weeks pass you will see that you are making progress and can gradually return to your normal everyday activities.
Recovery after PCI (angioplasty with or without stenting)

You will be given specific instructions following this procedure. These instructions will be explained to you by the nurse on the ward. Please follow these instructions very carefully.

You will be given a number to call if you have any worries.

You may feel well following this procedure but remember that the treatment you have had does not cure coronary heart disease. The disease process will continue unless you make lifestyle changes to help reduce the risk and take the medication that is prescribed for you.

Attending a cardiac rehabilitation programme can give you the information and support to help you make healthy lifestyle choices.

Discharge home

Before you are discharged several things will happen:

• you will be given a copy of your discharge summary. This will give a short summary of your diagnosis and treatment. It will also list your medications
• a copy of your discharge summary will be sent to your GP
• a nurse will explain your medicines to you before you go home
• you will be given one week’s supply of medicines
• your GP will prescribe your medications from the discharge summary for your repeat prescriptions and may increase the dose as directed in your discharge letter.

What is Acute Coronary Syndrome? (ACS)

If someone’s angina becomes unstable or if they have a heart attack they are said to be suffering from ACS.

ACS means:

• unstable angina, or
• heart attack (myocardial infarction or MI).

Diagnosis of ACS

The diagnosis is made from the history, symptoms, the electrocardiograph (ECG) and blood tests. Most patients with ACS will need an angiogram and the aim is to get patients to a Cath Lab (cardiac catheter laboratory) as soon as possible if they are having a heart attack.

Unstable Angina

Unstable angina refers to symptoms the first time that they occur or angina that was previously stable but has recently become worse or whose pattern has changed.

The symptoms may come on at rest, last longer and may not be relieved by GTN spray. You should contact your doctor about these changes.
What is a heart attack?

A heart attack happens when there is sudden loss of blood supply to the heart muscle. This happens as a result of CHD. Fatty deposits (called plaque) on the inside of a coronary artery can break and cause a clot to form that blocks the artery completely, see diagram above.

If the heart muscle is starved of oxygen for long enough it can be permanently damaged and die.

Emergency treatment is required to remove the blockage and restore the blood flow through the artery.

Day two

If you have had no chest pain and your heart rhythm has been stable, monitoring may be discontinued and you will be allowed to walk to the bathroom.

It is important to increase your physical activity slowly and to take into consideration your level of activity and fitness before your heart attack. When you have had a heart attack, it is important to rest if you feel tired and not have too many visitors.

Day three

Preparations will be made to support you when you leave hospital:

- if you have stairs at home and have problems with mobility, the physiotherapist will assess you before you are discharged
- before you leave hospital doctors, nurses, other health professionals will assess your care needs and plan your discharge
- a member of the cardiac rehab team will visit you on the ward before you go home. You will be referred to the cardiac rehabilitation service by your cardiologist

Your stay in hospital may be longer than 3 days if you are waiting for further investigations, such as an angiogram. This can happen if you are admitted over the weekend or if there are emergencies needing to go for PPCI.
Recovery after a heart attack
(Before you go home)
A positive troponin test shows some damage has been done to the heart muscle and recovery takes a little longer.

If you have been given a diagnosis of a heart attack with a raised troponin level and had stents inserted your recovery will be slower. You may be in hospital for a few days longer.

Day one
If your condition is stable:
- you will be allowed to sit out of bed
- you will be allowed to wash and use the commode at the bedside
- an ECG will be recorded daily
- you will continue to be monitored continuously and be seen by a cardiologist daily. Blood pressure, pulse and oxygen levels will be recorded every 4 hours
- your diagnosis and future management will be explained to you by the cardiologist
- the nurses will help you with any questions you may have regarding what you have been told
- you will be prescribed medicines to reduce the risk of you having another heart attack. The nurses on the ward or the pharmacist will explain how to take your medicines and the common side effects that can happen.

What are the symptoms of a heart attack?
The symptoms can be very similar to angina although there may be some differences. Most heart attacks are preceded by a history of angina but a heart attack can happen without any previous symptoms. It is important for people to realise that angina/heart attack can be mistaken for indigestion or heartburn.

Heart attack
- Chest pain may be more severe and last longer.
- Pain will not be relieved by resting or GTN spray.

You may feel:
- nauseous
- sweaty
- dizzy
- breathless
- abnormal heart rhythm
- pain can go through to the back

Sometimes a heart attack is ‘silent’ and causes very little discomfort. This can happen to people with diabetes,

If you think you are having a heart attack:

Call 999 immediately
Do not delay
It could save your life
When the ambulance arrives

When the ambulance arrives with a paramedic crew a rapid assessment will be made of your condition. Early and appropriate treatment can limit the damage to the heart muscle. The main priorities are:

- **ECG** - to make a diagnosis
- monitor **blood pressure**, pulse and heart rhythm
- **oxygen** - if levels are low in your blood
- **pain relief** - morphine into a vein or GTN spray under your tongue
- **aspirin** - if you are not allergic, to reduce clotting
- **resuscitate** - if you go into cardiac arrest. This can happen as a result of a heart attack.

If you need to be transferred to a centre that can provide a treatment called **primary percutaneous coronary intervention** (PPCI) the crew will take you to a suitable hospital.

If for any reason a specialist bed is not available or it will take too long to get to a hospital that offers this service, you may have **thrombolysis**, which means giving you a ‘clot-busting’ drug to dissolve the clot that is blocking the coronary artery. This can be given in the ambulance or at the nearest hospital.

If you do not require thrombolysis or PPCI the paramedics will take you to hospital for further assessment and treatment.

Statins

(simvastatin, atorvastatin, pravastatin)

These lower total cholesterol levels in the blood by blocking the enzyme (a type of chemical) in your liver that helps to make cholesterol. High cholesterol levels increase the risk of developing coronary heart disease (CHD). Even if you have a normal cholesterol level you will be prescribed a statin if you are at high risk of developing CHD. Blood lipids is the name for the fatty substances in the blood that include

- LDL (low density lipoprotein) ‘bad cholesterol’
- HDL (high density lipoprotein) ‘good cholesterol’
- Triglycerides

Statins can reduce total cholesterol by 20% and LDL levels by 30%. You will need to continue taking these medicines after you leave hospital and probably for the rest of your life.
Beta-blockers

(bisoprolol, atenolol, nebivolol, sotolol)

Beta-blockers reduce the effects of adrenaline in the body. Adrenaline is a natural hormone that is released in your body in stressful situations. It increases the heart rate, blood pressure and the force with which the heart pumps.

By blocking these effects, beta-blockers slow down the heart rate and lower the blood pressure. Because the heart is now not working as hard, the heart muscle itself needs less oxygen so the blood flow in the coronary arteries does not need to be so high.

This can prevent an angina attack and allow you to increase the amount of exercise that you are able to do. Beta-blockers also reduce the risk of you having another heart attack.

ACE inhibitors

(ramipril, lisinopril, enalapril, perindopril)

These drugs reduce the activity of an enzyme called angiotensin-converting enzyme (ACE).

This enzyme has a powerful narrowing effect on blood vessels, which causes an increase in blood pressure. ACE inhibitors relax or dilate blood vessels, therefore widening them, and reduce the amount of fluid retained by the kidneys. This lowers the blood pressure and reduces how hard your heart has to work. These medicines can also treat and prevent heart failure and reduce the risk of you having another heart attack.

If you have problems taking ACE inhibitors you may be given ARBs instead. These work in a very similar way.

Admission to A&E

Further assessment and treatment will be given

- chest X-ray
- blood tests
- specific test to measure troponin levels (troponin is an enzyme that is released into the bloodstream if heart muscle has been damaged)
- more ECGs.

The higher the troponin level, the more muscle has been damaged. This helps in the diagnosis of a heart attack.

If there is no troponin in the bloodstream or you don’t have a high level in your blood hours after symptoms first started it means your heart muscle was not damaged. This would confirm a diagnosis of unstable angina.

You may have more than one troponin test if the first test is negative because it can take some time for troponin to be released into the bloodstream.

Transfer to the ward

If you have a diagnosis of ACS in the Accident and Emergency (A&E) department, you will be admitted to the coronary care bays on Tisbury ward. The average length of stay will be 3 to 5 days if there are no complications. You will be monitored continuously and seen by a cardiologist every day.
Record of tests, diagnosis and treatment

During your stay in hospital, a complete record will be made for you to take home.

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<tr>
<th>Admission date:</th>
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<tbody>
<tr>
<td>Cardiac tests (insert dates)</td>
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<tr>
<td>Troponin Level 1</td>
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<tr>
<td>Troponin Level 2</td>
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<tr>
<td>Cardiac Enzymes</td>
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<tr>
<td>ECG</td>
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<tr>
<td>Angiogram</td>
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<tr>
<td>PCI treatment (may be carried out at time of angiogram test)</td>
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<tr>
<td>ECHO</td>
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<tr>
<td>Exercise Test</td>
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Diagnosis

<table>
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<tr>
<th>Acute Coronary Syndrome</th>
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<tbody>
<tr>
<td>Unstable Angina</td>
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<tr>
<td>Myocardial Infarction STEMI</td>
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<tr>
<td>Myocardial Infarction NSTEMI</td>
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</tbody>
</table>

If you already have a heart condition, you may be taking some or all of these medicines. The group of drugs include the following:

- anti-platelets
- beta-blockers
- ACE inhibitors or (ARBs) angiotensin receptor blockers
- statins.

The reasons for taking medicines are to:

- help prevent another heart attack
- help reduce the risk factors for coronary heart disease - such as high cholesterol levels or high blood pressure
- prevent or treat symptoms of angina
- strengthen the pumping action of your heart
- help reduce the risk of heart failure.

Anti-platelets

(aspirin, clopophobia, prasugrel)

Anti-platelets help to prevent the blood clotting. They do this by reducing the ‘stickiness’ of platelets, the cells in the blood that stick together to form a clot. This reduces the risk of you having another heart attack or of clots forming in stents that have been inserted during angioplasty.

You must not stop this medication unless your cardiologist advises you to do so.
• **Valve incompetence** - the valve does not close properly and it allows blood to leak backwards. Because of back pressure into the top chamber the heart has to work harder to pump enough blood through the leaking valve.

**Valve repair** is most often used for a leaking valve.

**Valve replacement** for diseased valves.

Your specialist will discuss which type of valve/treatment is most suitable for you.

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**Recovery after heart surgery**

The specialist centre will give you specific instructions to follow to help your recovery after heart surgery.

Please follow this advice carefully.

Cardiac rehabilitation (rehab) should receive a referral for you if you live in the Salisbury area. They will contact you to discuss coming to the classes and also any worries you may have once you are home.

You will not be able to start rehab classes until 8 weeks after your surgery.

**Medicines for the heart**

If you have been given a diagnosis of a heart attack or unstable angina you will be given medications to reduce your risk of having another cardiac event. You will need to take this medication every day.

The nurses on the ward or the pharmacist will explain how to take your medicines and the common side effects that can happen.

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**What is an angiogram?**

An angiogram is an examination of the coronary arteries using a dye that is visible on an X-ray.

The cardiologist inserts a hollow tube (called a catheter) into an artery in the wrist or groin. The catheter is then pushed along inside the artery towards the heart and eventually into the coronary arteries. This is done under local anaesthetic. Some X-ray dye is then injected through the catheter into the coronary arteries to make them visible on an X-ray and show up any narrowing or blockages.

The angiogram will help the cardiologist decide whether or not angioplasty and stenting is needed or medical treatment only. Your cardiologist will discuss treatment options with you.

In this angiogram, the coronary artery blockage is labelled ‘99% stenosis’.

Stenosis means narrowing.
What is angioplasty and stenting? (PCI)

Angioplasty and stenting is known as revascularisation or percutaneous coronary intervention (PCI).

The procedure is the same as that for an angiogram. A special catheter with a balloon at its tip is inserted into the coronary arteries and pushed along to where the blockage is [diagram A below].

As shown in the diagram, the balloon is gently inflated and this squashes the fatty tissue that is causing the narrowing [B]. A stent can be inserted to keep the artery open and maintain the blood supply to the heart muscle [C].

PCI can be performed as a planned procedure or as an emergency for someone having some types of heart attack, that is a complete blockage of the coronary artery. This is called Primary PCI. PCI can also be performed for someone admitted with unstable angina who is unwell and this is called an urgent PCI.

Angioplasty and stenting may not be suitable for some people and they may be offered Coronary Artery Bypass Grafting (CABG).

Coronary artery bypass grafts (CABG)

Coronary artery bypass grafting is an operation where a blood vessel (an artery or vein) is removed from one part of the body and attached to the heart’s coronary arteries to bypass a blocked coronary artery. The blood vessels used may be obtained from the inside of the chest wall, the leg or the arm.

Patients needing cardiac surgery will be referred to a cardiac surgeon at a specialist cardiac centre. Patients from Salisbury Hospital are usually transferred to Southampton University Hospital.

If you are an inpatient the nurse will be in contact with the surgical co-ordinator in Southampton University Hospital. You may be discharged home to wait for your CABG. The hospital where the surgery is to be done will in contact you.

Surgery for heart valves

You may need surgery to repair or replace damaged valves in your heart. The valves make sure the blood flows in the right direction. The valves at the entrance to the pumping chambers (ventricles) let blood in and the valves at the exits let blood out. A diseased or damaged valve can affect the flow of blood in 2 ways.

- **Valve stenosis** - the valve is stiff and narrowed and does not open fully. This can obstruct the flow of blood and the heart has to work harder to force the blood through the valve.