

# Cardiac Rehabilitation



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# INTRODUCTION

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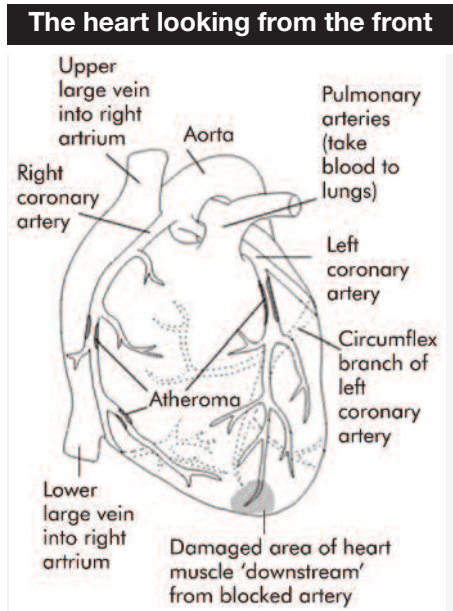
## Coronary Artery Disease

Coronary Artery Disease is all too common in the western world. About 103,000 people in the UK, every year will experience a heart attack (Myocardial Infarction). It can occur in those who have had angina for many years or occur 'out of the blue'.

You may have suffered a cardiac event and be filled with feelings of shock, uncertainty and anxiety. It is important to remember that most people make a full recovery. Understanding your condition and learning to modify your lifestyle will enable you to return to a fulfilling and healthy life.

## About your heart

The heart is made up of special muscle and is capable of miraculous powers of recovery. Its pumping action provides the body with oxygen and nutrients that are necessary for life. This special muscle has its own blood supply, a network of arteries called the **coronary arteries**. They are situated on the surface of the heart muscle called the myocardium. There are three main arteries dividing into small branches providing the myocardium with oxygen as required.



The arteries are susceptible to 'furring up', a process that usually takes many years. This is often due to fatty deposits building up in the walls of the arteries known as **atheroma**. It is thought that this build up develops slowly through life but the speed it develops varies widely from person to person.

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When one of the arteries becomes sufficiently 'furred up' the blood flow becomes reduced and cannot always supply the heart with enough oxygen to meet requirements.

This is called **angina**. For example when you walk up the stairs your heart will beat faster to get oxygen around but if the extra blood needed cannot pass the narrowing you may feel chest pains. These will resolve when the heart rests for a few minutes and generally does not cause any damage.

If an artery becomes blocked a heart attack may occur.

## **What is Acute Coronary Syndrome?**

Sometimes when someone goes into hospital with chest pain, it can be difficult for the doctors to make a clear diagnosis. You may be told that you have 'acute coronary syndrome'.

This is a general term that is commonly used to describe a patient suffering chest pains which may be a heart attack or 'unstable angina'.

Stable angina is usually well controlled by drugs and comes on with exercise. Angina that has just developed, recently got worse or its pattern has changed is called **unstable angina**.

Immediate treatment can relieve symptoms and minimise possible damage to the heart. This may include aspirin, Glycerine Trinitrate spray (GTN) and oxygen.

Tests to determine accurate diagnosis and treatment will be necessary in hospital. These may include blood tests to diagnose a heart attack, electrocardiogram, exercise tolerance test and angiogram.

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## A heart attack or unstable angina?

A heart attack is when part of the heart muscle suddenly loses its blood supply. Without prompt treatment this can lead to damage to the affected part of the heart. Plaques of atheroma form over a long period in one or more places in the coronary arteries. When a crack develops on the plaque it may then rupture, and a blood clot consisting of sticky platelets may be triggered to form on the rupture hence causing a total blockage. The heart muscle is immediately starved of oxygen so it is important that you do not delay getting to hospital to start the appropriate treatment. Medical treatment will commence to prevent any further damage to the heart and to monitor for abnormal heart rhythms (**arrhythmias**), which is crucial in the first forty eight hours.

An additional treatment called **thrombolysis** may be used to help dissolve the clot and re-establish blood flow back to the heart, thus limiting the loss of effective heart muscle. Do not worry if you do not receive this treatment, as your body is able to get rid of the clot (thrombus) over the next few weeks naturally.

## Thrombolysis therapy

### What is clot-dissolving treatment?

This treatment restores the blood supply and can reduce damage to your heart muscle. The less damage to your heart, the smaller the risk to your life, and the fewer the problems in the future. Clot dissolving drugs work best if given in the first few hours of a heart attack.

### Are there any side effects?

During treatment, bruising or bleeding are common, but these effects only occur during the actual period of treatment. A very small number of patients (3 or 4 in every thousand) have some allergic reaction to clot-dissolving drugs and these patients may need additional treatment. The treatment may alter the effect of medicines you are now taking or will take in the future. In particular, if you need a clot-dissolving drug in the future, make sure doctors know which one you have already been given.

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Another possible treatment that may be used is **primary angioplasty**. Some people may have a procedure to open the blocked artery immediately.

### **Will my heart recover?**

The heart is the strongest muscle in the body and has the ability to heal itself. After a few hours the recovery process will begin, the pain will ease and a scar will start to develop on the heart muscle. Remarkably, even if the heart is weak, and a large portion of muscle has been lost, the body can compensate with the use of appropriate medication.

## **WHAT ARE THE SYMPTOMS OF A HEART ATTACK?**

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- Severe, crushing central chest pain which may radiate to arms, stomach, jaw and hands.
- A constricting feeling around the throat.
- Discomfort may be less severe, possibly a dull ache, tightness across the chest or may feel like indigestion.
- However, some people have no pain but may experience some of the following:
  - o Sudden breathlessness
  - o Sweating
  - o Nausea and vomiting
  - o Palpitations
  - o Sudden fainting or dizziness

The symptoms above vary between different people and may be mild or intermittent. If in any doubt, or if symptoms last more than 15 minutes, **DO NOT HESITATE TO DIAL 999 AND ASK FOR AN AMBULANCE.**

# WHAT TO DO IF YOU HAVE AN ANGINA ATTACK

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If you experience chest pains similar to those you experienced during your cardiac event, this may need urgent attention and you should seek medical advice.

If you experience angina at rest, then you should tell your doctor because it may be a warning of another attack. If you experience angina you should **stop** whatever you are doing and sit down if possible and take your GTN spray.

If the pain does not ease after 10 minutes take your spray again. If your pain is still there after a further 5-10 minutes and is not easing you should **dial 999 for an ambulance**.

If you do not have a GTN spray and the pain lasts more than 15 minutes please **dial 999**. Do not be afraid of wasting peoples' time because it is vital that you get to hospital as soon as possible as it may be the beginning of another heart attack. It is better to be safe - you may not have the chance to be sorry!

Angina is usually relieved by rest and by using glycerine trinitrate (GTN) spray. It can be used more than once. The spray does not lose its efficiency if used regularly - it is effective each time it is used.

GTN spray temporarily widens the arteries of the heart and reduces the work of the heart. It allows more blood and oxygen to supply the heart muscle therefore relieving the pain.

# TESTS

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This section of the booklet is to help you understand the tests, treatments and medications you may have while in hospital or at home.

## **Pulse**

This is the pulse of pressure that can be felt in your arteries as a consequence of each heartbeat as it pumps blood into the blood vessels. The measurement of the pulse rate (e.g. at your wrist) gives a direct measure of how fast or slowly your heart is beating, and of any irregularity of the heartbeat.

## **Blood Pressure**

This is the pressure within your arteries. It will normally vary somewhat with circumstances, but any major change or trend can be a useful guide to how your heart is doing, so it will be measured frequently.

## **Temperature**

This is your body temperature and is measured in degrees Celsius (Centigrade).

## **Blood Tests**

There are many different tests that can be carried out in the laboratory on blood samples. Those commonly carried out after a heart attack are:

### **1) Hb haemoglobin or full blood count**

This is a test to check for anaemia.

### **2) Enzyme Levels**

After a heart attack, the damaged muscle releases enzymes, so that a raised level may help in diagnosing whether or not you have had a heart attack within the last day or two.

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### **3) Lipid Levels**

This test measures the levels of cholesterol and other fats in your blood. This information helps to form the advice that will be given later to help further reduce the risk of problems in the future.

### **4) Electrolytes**

These measure the level of salts in your body which may be affected by the medicines used to treat your heart attack.

## **Heart Monitor**

A heart monitor displays the activity of your heart on a screen, showing the heart's rhythm and rate. This provides crucial information for medical staff, especially in the first 48 hours following a cardiac event.

## **Electrocardiogram (ECG)**

This is a more detailed way of recording the electrical activity generated by the heart. It gives the doctor further important information about your cardiac event.

## **Exercise Stress Test**

This is a test which assesses the amount of exercise you can safely do. The heart's action is monitored while you walk on a treadmill at gradually increasing speeds.

## **X-Ray**

This is a special photograph of your heart and lungs and is usually done so that the doctor can look at the size, shape and position of these organs.

## **Heart rhythm recorders**

These enable your heart rate and rhythm to be recorded continuously for an extended period either as an in-patient or an out-patient.



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## Echocardiogram (Heart Scan)

This is an ultrasound test which enables the doctor to observe your heart in action, to assess its function and see how well it has recovered. It is totally non-invasive and harmless.

## Myocardial perfusion imaging (MPI)

This scan shows how well blood is reaching the heart muscle. A small amount of thallium is injected into a vein and is then monitored by a special camera on its journey around the body. The levels of radiation are not harmful.

## Angiogram

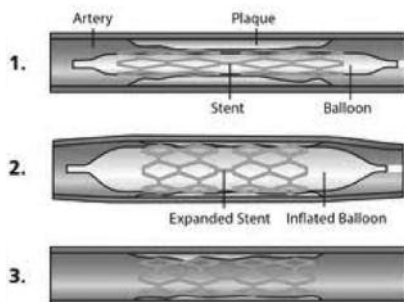
A special dye is injected through a very fine flexible tube (catheter) which is usually inserted into an artery in the arm. The dye goes to the arteries around the heart to investigate any narrowings you may have and therefore allow the appropriate choice of treatment to be made.

## Angioplasty (PTCA)

The procedure is similar to an angiogram. A very small balloon is inserted via the catheter into the narrowed artery and is used to stretch open the narrowing (stenosis).

## Percutaneous coronary intervention (PCI)

### Stent with Balloon Angioplasty

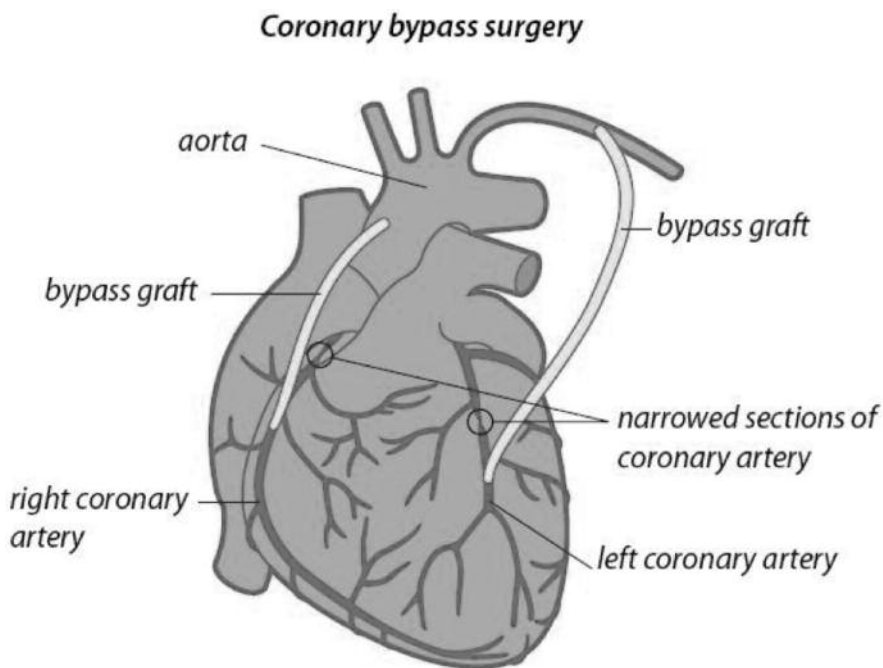


The doctor may decide to insert a stent inside the artery to make sure it stays open after the angioplasty. It can be stretched to fit and acts as scaffolding to hold the narrowing open. Eventually the stent becomes embedded in the lining of your artery helping to prevent it from narrowing again.

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## Coronary Artery Bypass

This is a very common operation in the UK and thousands of people undergo this procedure every year. New blood vessels are created using your own veins from your legs or arteries from your chest wall and are used to bypass any narrowings. This operation may be performed following a heart attack or to ease the symptoms of angina.



# GOING HOME

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After the security of the hospital environment and the close observations of the nurses and doctors, many patients feel rather anxious about going home. It must be emphasised that your heart is a very strong organ with plenty of reserve. After approximately 4 to 6 weeks, the scar on your heart muscle will have completely healed, and after an initial period of convalescence your heart will return to functioning effectively and efficiently.

You may feel fatigued and listless; this is quite normal and will gradually improve. In the meantime give your body plenty of rest. You should aim for 7 to 8 hours of sleep at night and, during the early weeks, rest in the afternoon or when you feel your body needs it.

## MEDICATION

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Upon discharge from hospital, you may be taking with you an assortment of tablets. There are certain rules that you should follow when taking any drug:

- 1) Plan when you are going to take your medication. It will help you to remember when to take them if you take them at the time of a regular activity, such as brushing your teeth. Whatever time you choose, they must be taken regularly and as prescribed by your doctor.
- 2) Be sure that you take the medication prescribed by your doctor. Check with them before taking any other medication, such as drugs that you can buy over the counter (e.g. Aspirin, Ibuprofen, cold remedies and vitamins). Some drugs react with each other and can alter their effectiveness.
- 3) Never stop taking your medication without consulting your doctor.
- 4) Avoid grapefruit or grapefruit juice if taking a statin for your cholesterol. This can alter the effectiveness of the statin.
- 5) The tablets you are prescribed should not generally cause side effects. If you develop unusual symptoms, let your doctor know so that they can help.

# FEELINGS AND RELATIONSHIPS

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Following a cardiac event many people go through a period of feeling anxious, depressed or bad tempered. These feelings are quite normal after such an event and as time passes your self- confidence will return as you start to anticipate a normal future.

Having a cardiac event can put even the closest relationship under a lot of stress. There may be feelings of anger or guilt which come to the surface as a result of a cardiac event. These can cause resentment, and family members may bottle up their true feelings because they are too frightened to upset the other person. Often these problems can be helped or resolved by talking about them, although this may not come easily.

You may feel sudden tiredness; feel tense, experience bouts of temper, have butterflies in the stomach or a pounding feeling in your chest. All of these are common emotions created by physical and mental anxiety. You may also feel vulnerable if you feel your role within the family has changed. These are normal feelings and can be discussed with your specialist cardiac rehabilitation nurse.

## SEXUAL RELATIONSHIPS

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Like all forms of exercise, sexual intercourse leads to an increase in heart rate, blood pressure and quicker breathing. After a heart attack or cardiac event you may be wondering if sex will stress the heart too much and be dangerous for you. The short answer is no.

The effect on the heart of having intercourse is comparable to walking moderately for ten minutes, and then climbing two flights of stairs. The stress on the heart is modest, and sex can safely be enjoyed without risk. It is wise to wait for about two to four weeks after your cardiac event before resuming sex.

However, you and your partner still need affection, as you may feel miserable at times and your partner may need to be reassured too. When you feel ready to have intercourse again you may find it helpful to be the less active partner in the relationship, and to be aware that it is quite natural for both you and your partner to be apprehensive.

If you find you are experiencing sexual problems please discuss this with the Cardiac Rehabilitation specialist nurse or your GP.

# RETURNING TO WORK

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Six to eight weeks after their cardiac event, many people are fit to return to work, depending upon their circumstances and the nature of their work. You should consult your doctor first.

It is often advisable to start back to work, including housework, on a part-time basis for the first few weeks, and then build up to full time as your condition improves. You may feel unexpectedly tired and fatigued when you start back to work, but if you organise a rest in the evening and a short spell of exercise, these feelings should wear off as you get used to the routine of working again.

There are certain jobs that people may not be able to return to after they have had a heart attack, namely driving trains, heavy goods vehicles or public transport vehicles. Please discuss this with your GP or consultant.

## DRIVING

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You are advised to contact your insurance company when you are discharged from hospital as they may have to adjust your policy. **If you fail to inform them your policy may become invalid.** Note that the **DVLA** has strict guidelines. You must be stable and symptom free before you may drive.

The key point is that you should not drive if this brings on angina.

Following a cardiac event the cardiac rehabilitation nurse will advise you for how long you must refrain from driving. This is a legal obligation.

It is essential that you try to remain as relaxed as possible while you are driving, and build up the amount you drive slowly. Make the first few trips short ones and do not overtire yourself. It is better not to drive for longer than two hours and to take frequent breaks if you do have to undertake a longer journey.

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**If your work involves driving then you must inform your employer.**

Group 2 license holders (e.g. HGV) **are disqualified from driving for 6 weeks.** Notify the DVLA and your insurance company. Re-licensing may be permitted after this time if your exercise tolerance requirements are met and there are no other disqualifying conditions.

You will need to obtain a form from the **DVLA** and arrange to have an exercise test with your cardiologist.

## **FLYING**

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You should not travel by air for at least 7-10 days after your cardiac event, as long as there are no complications, or if your doctor says you are fit to fly. If there are complications you must wait at least 4-6 weeks or have permission.

**Please discuss flying advice with your nurse or doctor.**

## **EVERYDAY ACTIVITIES AFTER YOUR HEART ATTACK OR CARDIAC EVENT**

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Having a heart attack does not mean that you have to stop all your usual activities, but it may mean that some adjustments have to be made. While you are in hospital an assessment will be made to help you maintain as normal a lifestyle as possible.

# WHAT CAN I DO WHEN I GET HOME?

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## Looking after yourself

Immediately from discharge you can take a bath or shower. You may climb the stairs but will need to pace yourself (see pacing in 'Activity' section).

## Around the house

You may wash up, dust and do some cooking as soon as you get home but avoid lifting heavy pans for a few weeks.

### **Avoid all of the activities below for four to six weeks**

(six weeks if you have had cardiac surgery).

- Using the vacuum cleaner
- Cleaning the windows
- Washing and hanging out laundry
- Ironing
- Putting out the dustbin
- Lifting and carrying shopping

### **House maintenance** (avoid 6 weeks)

- Climbing ladders
- Painting
- Using power and hand-tools

### **Hobbies**

- Car Maintenance
- Gardening
- Driving (see 'Driving' advice)

# RESUMING ACTIVITY

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During the first few days at home you should carry on doing similar activities to those you did in hospital. You may go up and down stairs slowly and you can walk around the garden.

As a general rule you should do a little more each day as long as the activities do not produce undue fatigue, breathlessness or chest pain. Listen to your body; if you feel tired, take a rest!

By the second or third week at home you should be feeling much stronger and can build up your activities accordingly.

By 6 weeks you should be able to resume your normal activities. If you intend to undertake any strenuous type of activity/sport please consult the Cardiac Physiotherapist or Cardiac Rehabilitation Specialist Nurse for specific advice. The best form of exercise to start your recovery is a progressive walking programme (see below).

## Walking Programme

1st week at home:	05-10 minutes daily
2nd week:	10-15 minutes daily, building up to twice daily
3rd week:	15-20 minutes, 1-2 times a day
4th week:	20-25 minutes, 1-2 times a day
5th week:	25-30 minutes, 1-2 times a day

Begin your walks on the flat initially and if you feel anxious, take someone with you for moral support.

Go for your walk at the time of day when you feel that you have most energy, not too soon after a main meal and avoiding extremes of temperature. Start your walk slowly at first (warm up), gradually building up to a comfortable pace, then reduce your pace towards the end of your walk (cool down). While you are walking, you should start to feel warm and find yourself breathing a little harder (slightly “out of puff”) but be able to talk comfortably. Make sure you wear comfortable clothing and appropriate supportive footwear.



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## Pacing

You may find that you have good and bad days. It can be tempting to do more on the good days but then find you are exhausted the next day. If this pattern continues you may find that you are doing less and less on the good days, becoming more frustrated and losing confidence.

The heart takes a little while to become accustomed to the new demands placed on it so it is important to start physical activity slowly. A good guide is how you feel the next day. If you feel fine, then continue with that amount of activity daily for the week. You can then gradually increase the amount you are doing.

Set yourself goals that are achievable and measurable, as it helps to see your progress.

## Long Term Physical Activity Targets

Make regular physical activity part of your life, as it can reduce the risk of further heart problems and improve your fitness and health in general. Most importantly choose something that you enjoy doing!

**You should be aiming for a minimum of 30 minutes of moderate intensity activity on at least 5 days of the week.**

# REDUCING THE RISK OF HEART DISEASE - RISK FACTORS

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If you have one or more risk factors this may put you at risk to coronary artery disease. The major risk factors are briefly described in this section.

## Blood-pressure

High blood pressure can increase the risk of you having another heart attack. It is generally recommended that doctors routinely check blood pressure of people in their practice and your blood pressure was checked on a regular basis while you were in hospital. If you do have raised blood pressure, then you will be given medication to keep it under control. It may also help if you cut down on your salt intake, lose weight and take regular exercise. You will enjoy life more if you learn to relax, and many people feel that this will help to reduce blood pressure and therefore the risk of heart attack, although this is difficult to prove.

### Know your ideal blood pressure

Diabetic                < 130/80 mmhg  
Non-diabetic        < 140/85 mmhg

## Lipids

Cholesterol is a fatty substance found in our blood. If the levels are too high it can settle in the walls of the arteries. Cholesterol in the form of plaque may cause narrowings in the arteries which may cause heart attacks and angina by restricting the flow of blood to the heart. Cholesterol is made up of ‘good’ cholesterol (HDL) and ‘bad’ cholesterol (LDL).

Triglycerides are the major form of fats which come from sugary food and they are also made in the body to provide energy. Triglycerides are commonly raised in people who are overweight, diabetic or have a high alcohol intake.

### Ideal lipid levels:

Cholesterol:    less than 4.0mmols  
Triglycerides:   less than 1.7mmols  
HDL:            > 1.0mmols  
LDL:            < 2.0mmols

### Your levels

# SMOKING

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More than one third of all the deaths of people in Britain between the ages of 35 and 50 years can be attributed to smoking. **Smoking is the single most important preventable cause of heart attacks and death from coronary disease.**

## You **MUST** stop smoking.

There is no doubting medical science on this point and, importantly it is not too late to give up. The risk of heart attacks caused by the furring-up of coronary vessels is said to have virtually disappeared two years after giving up smoking. Other smokers in the family should also give up before you go home so that you will not breathe in their smoke or be tempted to smoke yourself.

Smoking can also be related to other diseases, some of these being:

Lung Cancer

Cervical Cancer

Peptic Ulcers

Emphysema

Peripheral Vascular Disease

Aortic Aneurysm

Affects Fertility

Gangrene

Cancer of Nose and Throat

## IT IS NEVER TOO LATE TO GIVE UP SMOKING

When you stop smoking after your heart attack, you will reduce your risk of another heart attack by HALF, and this is something you can do for yourself.

# HOW TO STOP SMOKING

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- Decide that you will stop and tell your friends and family.
- If other people in your family are smokers, ask them to give up with you, then everybody will benefit.
- Throw away all your cigarettes.
- Have a bet or competition with a friend.
- When you want a cigarette, find something else to do.
- When you go to places where others are smoking, tell them that you have given up and that your life depends on it.
- Do NOT change to a pipe or cigars as this also carries a serious risk.

If you feel you want more information or help with your smoking, please do not hesitate to talk to any member of the staff caring for you. Your rehabilitation nurse can refer you to a smoking cessation counsellor.

## PASSIVE SMOKING

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Passive smoking is breathing other people's smoke. It can cause irritation to eyes, throat and nose, headaches, dizziness and sickness.

The risk of lung cancer is increased by up to 30% in non-smokers as a result of passive smoking over a long period.

## STRESS

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Stress only becomes harmful when it is not controlled. To be able to control how we react to stressful situations, we first have to recognise how we react and to what. It could be deadlines at work and home, too much work, colleagues, family arguments, children, financial matters, holidays; all these and many more put our minds and bodies under strain.

The effects of stress are different for everyone, ranging from headaches to severe depression and body pains. Stress can disrupt our lives at home and at work. You and your family should learn to recognise the signs of stress and find ways to cope with stress; forget deadlines, plan your workload, delegate work, allow time for yourself, take up a new hobby and exercise more.

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## Ways to cope

- When you find yourself getting anxious about something, try taking a deep breath and breathing out slowly.
- If you feel tense and “wound-up”, try putting the situation into perspective by thinking about how you can overcome it rather than how anxious it makes you. Often, things are not as bad as they seem.
- Try to take more exercise as this is a good way of releasing tension in your body.
- Try not to do more than one job at a time. This will help you do things in a more relaxed way.

## DIET

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Food is an important part of everyone’s life; we all enjoy food. However, it is often a part of our lifestyle that can be neglected. The supermarkets are full of an array of food. Unfortunately, it is not all good for our health.

This section gives a brief guide to help you understand the foods which are beneficial for the heart and those we need to keep to a minimum. Changing your diet is a lifestyle change, not something you do for a couple of weeks. It is important, therefore, to make these changes slowly so you can adapt to the new way of eating easily and successfully.

If you feel you need specific advice please ask your cardiac rehab nurse or your doctor to refer you to a dietitian who can help you make personal changes to your diet.

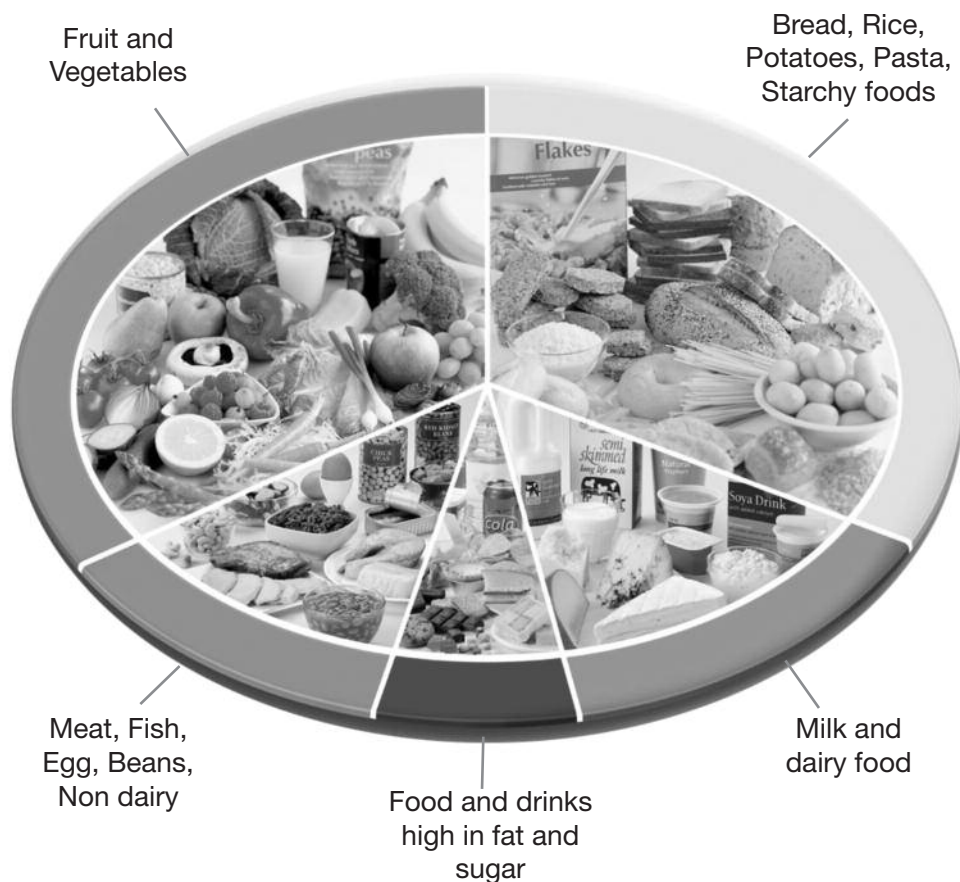
### Principles of healthy eating:

- 1) Eat three regular meals every day based around starchy carbohydrates
- 2) Eat 5 portions of fruit and vegetables every day.
- 3) Reduce salt intake.
- 4) Eat more fish, especially oily fish.
- 5) Reduce your saturated fat and sugar intake.
- 6) Keep hydrated – consume 6-8 cups of fluid every day.
- 7) Be active.
- 8) If you wish to drink alcohol, stick to the recommended alcohol limits.

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## Eatwell Plate

The Eatwell plate highlights the different types of food that make up our diet, and shows the proportions we should eat them in to have a well balanced and healthy diet.



**To help eat well for a healthy heart we advise you to eat less saturated fat, less sugar and less salt. So what does all this mean?**

# FATS

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## 1) Saturated fats

When eaten in large amounts, saturated fat can increase 'bad' cholesterol (LDL) which contributes to blocked arteries. It is found in dairy products, meat and meat products, cooking fats of butter/lard, and biscuits/puddings. We therefore need to reduce these foods in our diet and chose the healthier lower fat options suggested below:

### **Dairy products**

Change from full fat yoghurts to low fat/low sugar diet yoghurt.  
Choose semi-skimmed or skimmed milk instead of full cream milk.  
Choose low fat cheese e.g. 1/2 fat cheddar and only consume a matchbox size (which counts as a portion) or try cottage cheese.

### **Meat and Meat products**

Reduce red meat - only have once/twice per week and ensure it is lean.  
Choose chicken and turkey over red meat and grill rather than fry.  
Cut off all visible fat or remove skin from chicken.  
Choose fish instead of meat and poultry as it is lower in saturated fat.  
Reduce number of pasties, meat pies and faggots.

### **Biscuits/puddings**

Choose plain biscuits in moderation, sorbets, and low fat milk puddings.  
Make sure sponge cakes/puddings etc. are only eaten occasionally as a treat

## 2) Trans Fats

Trans fats are found naturally at low levels in some foods such as those from animals including meat and dairy products. They can also be found in foods containing hydrogenated vegetable oils. Trans fats can raise cholesterol levels.

## 3) Polyunsaturated fats

Polyunsaturated fats are preferable to saturated fats. Polyunsaturated fats help to lower the cholesterol in your blood. Dietary sources include vegetable oils such as sunflower, corn and soya oils. One type of polyunsaturated fat that we should be eating is found in oily fish (Omega 3). This is very beneficial for keeping blood running smoothly.

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#### 4) Monounsaturated fats

Evidence suggests that this is the most beneficial fat. Monounsaturated fats help to lower the cholesterol in your blood. Monounsaturated fats should replace saturated fat e.g. Butter should be replaced with monounsaturated fats e.g. olive and rapeseed oils and spreads.

## TOTAL FAT

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As well as increasing our risk of developing heart disease, eating too much fat can also lead to becoming overweight or obese. All types of fat are 'fattening' therefore eating more than we need will contribute to weight gain. Overall we require a reduction in the total fat in our diet.

#### Tips for reducing total fat in the diet

- Trim visible fat from meats and remove skin from poultry. Buy lean cuts.
- Don't add fat when cooking if possible.
- Grill, bake or microwave foods rather than frying.
- Choose low fat options by checking food labels.
- Instead of butter, use margarine or low fat spreads e.g. Olivio, Flora, Bertolli
- Use low fat mayonnaise and salad cream.
- Cook oven chips in preference to deep frying chips.
- Reduce high fat snacks such as crisps and biscuits.

## SUGARS

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Sugar is just 'empty' calories; it provides no benefit other than a short term energy boost. To regulate weight and help reduce Triglyceride levels to within a normal range you need to:

- Choose sugar free drinks e.g. diet cola, unsweetened fruit juice, no added sugar squash
- Choose tinned fruit in natural juice not syrup and eat low sugar jelly.
- Choose low fat and low sugar yoghurt.
- Choose sugar free jams and pure fruit spreads.
- Choose artificial sweeteners such as Splenda and Canderel, instead of sugar.
- Reduce sweets, chocolates, sweet biscuits, cakes and desserts.



# SALT

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Too much salt is a risk factor in heart disease, it can cause raised blood pressure. The availability of more and more convenience foods has increased the average day's consumption of salt. Adults should eat no more than 6g of salt per day which is around 1 teaspoon.

## **Ways to reduce salt intake:**

- Do not add salt during cooking
- Taste foods before adding salt at table
- Use herbs, spices etc. to add flavour
- Avoid salt substitutes
- Cut down on salted meats e.g. bacon, gammon and ham.
- Avoid stock cubes.

**So we know what to avoid. Here's the good news –  
What to eat more of.....**

# FRUIT AND VEGETABLES

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You should try and aim for 5 portions of fruit and vegetables per day. These are an excellent source of vitamins, minerals and fibre. Having five portions in a day protects the heart. All sources of fruit and vegetables are beneficial whether they are fresh, frozen, tinned (in natural juice) or dried.

Here's an example of how you can incorporate more fruit and vegetables into your diet:-

Breakfast:	Glass of fruit juice = 1
Lunch:	Salad in sandwich = 1
Evening:	Meal containing carrots and broccoli = 2
Evening:	Banana = 1

## **Examples of one portion:**

- 1 piece of fruit i.e. apple / orange / banana
- 1 slice of large fruit i.e. melon / pineapple
- 2 small fruits i.e. plum / kiwi / satsuma
- 1 cupful of strawberries / raspberries / grapes
- 1/2 - 1 tbsp dried fruit
- 2 - 3 tbsp vegetables
- 1 cereal bowl of salad

# FIBRE

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Fibre is beneficial in two ways. Insoluble fibre e.g. wholemeal bread, whole grain cereals provides bulk 'roughage' which can prevent constipation and make you feel fuller for longer after your meals.

Soluble fibre e.g. pulses, oats, lentils, peas and beans, is beneficial in helping lower cholesterol and reducing the risk of heart disease. We therefore need to include fibre regularly into our diet. It is important though that if fibre intake increases, fluid intake also increases. You should aim for 6 – 8 cups of fluid a day.

## **Ways to increase fibre:**

- 5 fruit and vegetables per day
- Baked beans on toast
- Add lentils to soups/stews
- Tinned lentil and tomato soup
- Baked potato with chilli con carne
- Increase high fibre breakfast cereals such as Weetabix, Branflakes, All bran

# OILY FISH

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Oily fish provide essential Omega 3 oils which help the heart by making the blood less sticky and help reduce triglycerides. Omega 3 fats are found in fish with darker flesh. The fish can be fresh, frozen, chilled, canned or smoked. You should try and incorporate 2 – 3 portions of oily fish a week. Types of oily fish include: - sardines, mackerel, tinned salmon, herring, kippers and fresh tuna (not tinned tuna).

## **Meal suggestions**

- SLT sandwich (sardines, lettuce and tomato)
- Salmon and cucumber sandwiches
- Tuna pasta bake
- Grilled mackerel, new potatoes and peas

# OVERWEIGHT

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Being overweight may put extra strain on your heart. It may lead to an increase in your cholesterol, blood pressure and increase the chance of developing diabetes. Please speak to the cardiac rehabilitation nurse or your doctor who can refer you to a dietitian if you would like further weight management advice.

# ALCOHOL

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Alcohol in moderation is not harmful to your coronary arteries, though excessive quantities can weaken the heart muscle.

Alcohol is high in calories so it will not help you if you are attempting to lose weight.

If you do wish to include alcohol in your diet the recommended guidelines are as follows:-

- 2-3 units/day women
- 3-4 units/day men

But you need to include 2 alcohol-free days in the week and you should spread the units throughout the week.

A unit quantifies for ½ pint lager/cider (3-5% ABV), 1 small glass of wine, 1 single pub measure of a spirit.

Always check with your doctor that your medication does not interact with alcohol.

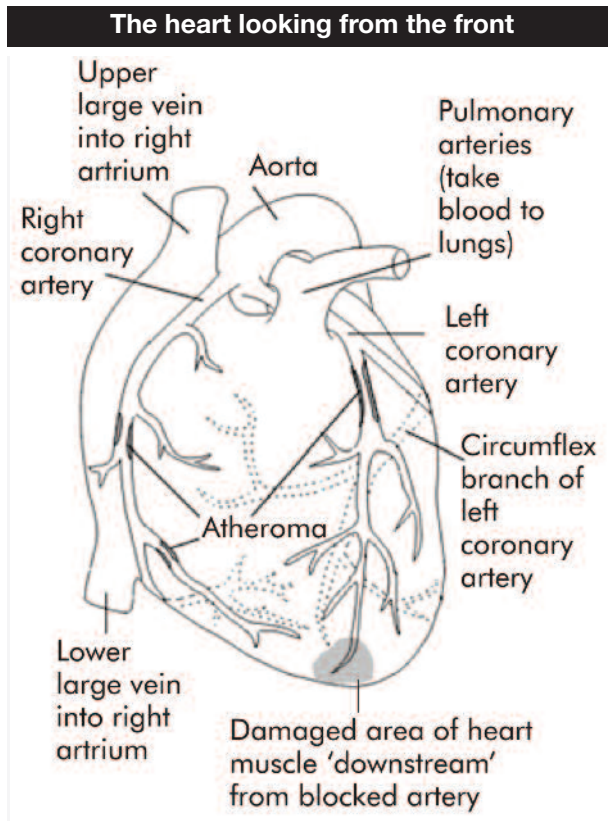
# SUMMARY

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As mentioned at the beginning of this section, dietary changes are for a lifetime. If you have identified changes that are needed, write them on the next page and then choose a few to do each week. Once you are happy with the changes cross them out - you are now one step closer to a healthy balanced diet

# NOTES

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# A NEW WAY OF LIFE

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There are some specific ways of reducing the chance of another cardiac event. Now is an ideal time for you and your family to reassess your lifestyle and to identify known risk factors. There is a great deal that you can do, but it is up to **you whether you do it. Don't miss out (for your family's sake as well as your own).**

## THE CARDIAC REHABILITATION PROGRAMME

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This six week long programme is suitable for most people approximately four to six weeks after their cardiac event. Classes are held at the University Hospital of Wales, Maindy Leisure Centre and at University Hospital of Llandough twice a week and consist of education talks, an exercise programme, stress management and relaxation techniques. Many people find this a great way to further understand their condition and to meet others. In addition, people can share common experiences as well as beginning to make positive changes in their lifestyle. The Cardiac Rehabilitation Specialist Nurse will give you more details of these popular classes.

## LEISURE CENTRE CLASSES

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There are several exercise classes held in local leisure centres which are supported by the Cardiac Rehabilitation Department. They are for anyone with a heart condition who has completed the initial Cardiac Rehabilitation Programme and are designed to give people the confidence and knowledge to exercise more independently and regain a normal lifestyle. The classes are held by qualified trainers and a referral form will be required from a member of the Rehabilitation Team in order to take part.

# Cardiac Rehabilitation



Cardiac Rehabilitation at UHW  
**02920 743384**  
University Hospital of Llandough  
**02920 715003**

**[cardiac.rehabilitation@wales.nhs.uk](mailto:cardiac.rehabilitation@wales.nhs.uk)**

**Alison McCarthy** updated 2014