



Cardiac Surgery in the North of Scotland

Information for Patients and Carers.

North of Scotland,
Cardiothoracic Surgery Unit,
Aberdeen Royal Infirmary



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About this booklet

You may have had the chance to discuss your operation with your Cardiologist, Cardiac Surgeon, or while you were at an information session with the cardiac rehabilitation team.

We have written this booklet to help you and your family prepare for your heart surgery. We hope the booklet will provide you with useful information whether you are in hospital or recovering at home.

You may have questions for members of the healthcare team after reading parts of the booklet. If you have any questions or concerns, you can contact:

- **Your GP**
- **Your surgeon**
- **The staff on Ward 216, ARI, telephone: (01224) 552294 or email: gram.noscts@nhs.scot**
- **The Cardiac Rehabilitation Department: (01224) 553946**
- **Community Cardiac Nurse: (01224) 554237**





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A Why do I need cardiac surgery?

The most common reason for needing surgery is heart disease.

The most common types of heart disease are:

- **Coronary artery disease (CAD).**
- **Valve disease.**

Other reasons for surgery include:

- **Congenital defects (things you were born with).**
- **Diseases of the aorta including aneurysms (bulging of heart muscle), cardiac tumours.**
- **Heart rhythm disturbances.**

These are described in more detail on page 4.

New techniques in cardiac surgery

Minimally Invasive Cardiac Surgery

The usual incision (wound) for most cardiac operations is median sternotomy (opening the chest from the front in the midline). This is usually a well tolerated wound. There are other options to make the wound smaller, and in some cases the operations can be done with the aid of a camera thus reducing the wound and the size of the operation. They may require additional wounds e.g. in the groin, to be able to do this. These operations are suitable in certain cases but cannot be offered to all patients.

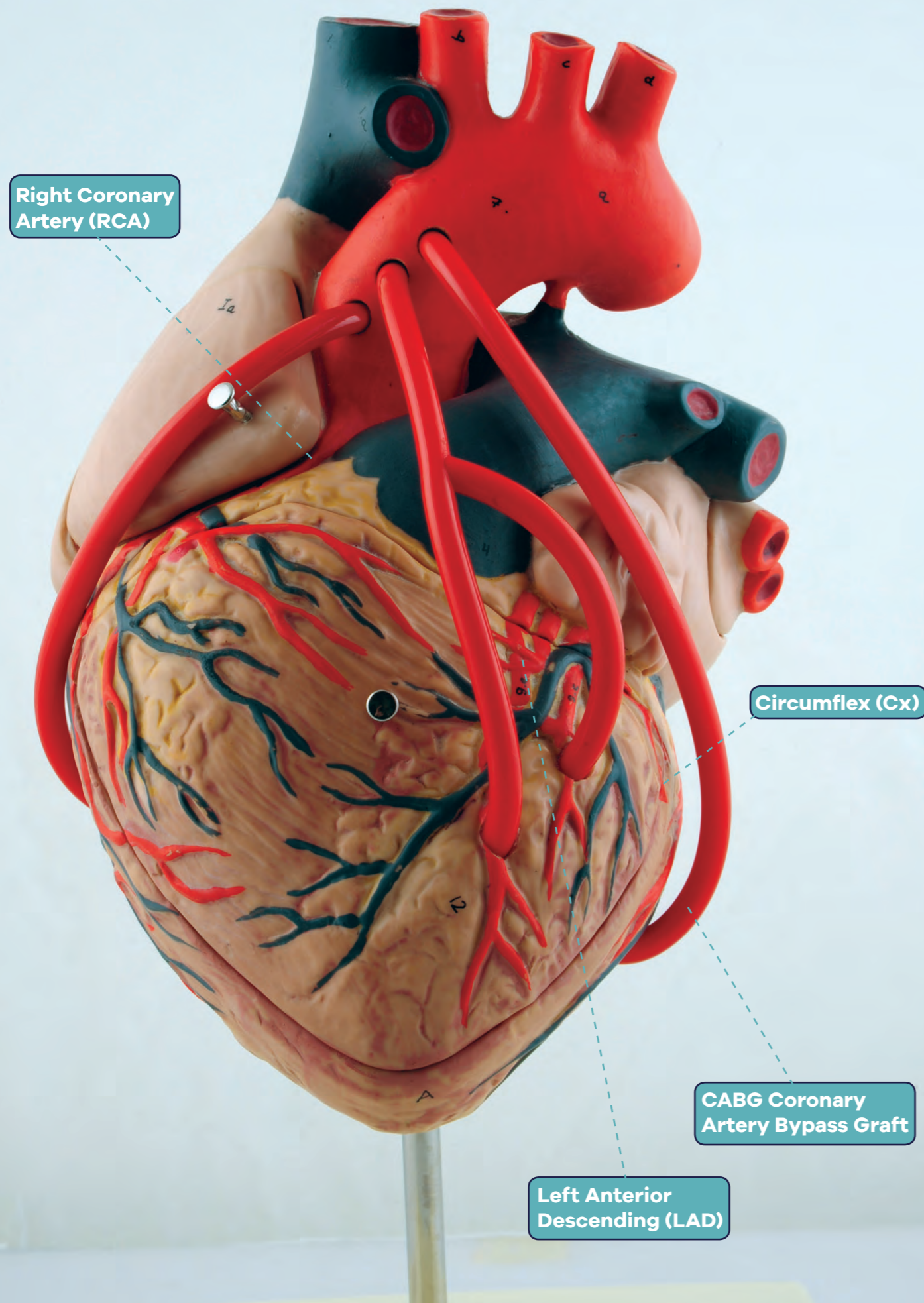
The surgeon will usually discuss such options during the counselling for cardiac surgery.

TAVI

You may have heard about TAVI (Trans-Aortic Valve Insertion). This is a procedure in which the aortic valve is accessed from a different approach to the standard surgical wound, usually from the groin. The valve is stretched and an expandable valve is inserted. In this way the procedure may be done, usually without opening the chest and frequently without a general anaesthetic.

At the present time, this procedure is being offered to inoperable and cases with high risk from surgery. This is because the long term results are not certain yet. There are expectations that there will be expansion in performing TAVI in the future and lowering the threshold of risk to offer the procedure. Surgical aortic valve replacement remains the standard treatment for aortic valve disease.





Valve in Valve

This may be part of TAVI. There is new technology which allows the treatment of a diseased valve or one that is not working to insert a valve without the need to re-open the chest. This procedure is currently available but remains in very early stages. It can be recommended in cases where the risk of re-do surgery is too high. The availability of such a technique means that patients at a younger age may have biological valves and thus avoiding Warfarin therapy, which is essential for mechanical heart valves.

Sutureless Valves

Also called rapid deployment valves. These are biological valves with certain design which allows their deployment without the need to stitch them. This makes them fast and easy to deploy, and in certain cases will be suitable to be used instead of the usual biological heart valves. They make less invasive operations more feasible.

Robotic Cardiac Surgery

As with many other surgeries, the robot is being introduced as a tool to assist in performing operations with more precision and less invasion. At present, the use of this in cardiac surgery remains in a very early phase and is only used on rare occasions, and in very few countries. The prospect of this development is enormous as it will change the traditional way we think about surgery.

Surgery for coronary artery disease

Coronary Artery Disease

Coronary arteries are blood vessels that supply the heart muscle with blood that is rich in oxygen. There are two main coronary arteries, the right and the left. These in turn divide into a number of branches. With coronary artery disease, fatty deposits can build up in the coronary arteries causing them to become narrowed or blocked. As a result, the heart muscle does not receive enough blood, sometimes causing angina (chest pain) or shortness of breath.



Coronary Artery Bypass Grafting (CABG)

By using a vein from your leg, an artery from your chest or an artery from your forearm, the blood supply can be re-routed around the blockage or narrowing. These are called coronary artery bypass grafts. Your original arteries are not removed. Removal of a vein or artery will not affect the function of your limb.

Surgery for heart valve disease

Valves and valve disease

Heart valves are small flaps of tissue which keep blood flowing in the right direction through the heart. There are four sets of heart valves: the tricuspid, pulmonary, mitral and aortic valves. For the heart to pump efficiently, the valves must open completely and freely to let blood flow forward. If the valves leak or are held partly open, the heart has to cope with an increased amount of blood. This can result in pain, shortness of breath, dizziness, tiredness and weakness.

Valves may need to be replaced or repaired because of two types of defects:

- **A narrowing of the valve (sometimes called stenosis).**
- **A leak in the valve that allows blood to flow backwards (sometimes called regurgitation).**

These defects may be congenital (something that you're born with) or may develop later in life. Defects may develop later in life due to infection, rheumatic fever or drug use. Another cause may be the process of ageing, which can weaken an already damaged valve or can harden normal valve tissue. In some people, their own valve can be repaired. In other people, however, the valve is so badly damaged that it must be replaced. Sometimes, more than one set of valves need replaced.





Types of replacement valve

There are two main types of valve; mechanical and tissue. Mechanical valves are made from metal and synthetic materials. Tissue valves are made using animal or human tissue. Your surgeon will discuss the different types of valves with you and the advantages and disadvantages of each. For example, mechanical valves last longer than tissue valves but people who have mechanical valves must take blood thinning medication (such as warfarin) for the rest of their lives.

Dental care before and after valve replacement

Please make sure you keep your teeth and gums healthy. This is important as bacteria around the teeth and gums can enter the bloodstream and cause infection of the heart valves. You will need to have a thorough dental examination and any outstanding dental work completed before you come into hospital. Please see your dentist to arrange this.

Failure to get a dental check could mean that your operation may have to be postponed. If you have any problems with this please contact one of the secretaries on ward 216. If you have full dentures you don't need to see a dentist unless you have any gum problems (such as bleeding, pain and bad breath)

After your valve replacement, visit your dentist at least every six months for a check up. Always let your dentist know that you have had valve surgery and if you take warfarin. If you have any signs of a mouth infection (such as altered taste, white spots in your mouth, pain or bad breath), contact your dentist or GP.

Infection in heart valve disease

Due to the heart valve surgery, you may be more susceptible to infection of your heart tissue and valves. This is a complication that can be caused by bacteria from infections elsewhere in the body entering the bloodstream and reaching your heart. You can reduce this risk by avoiding activities which may lead to cuts, skin abrasions or wounds. Consult your GP for further advice.



Warfarin after valve surgery

People who have artificial (mechanical) valves, must take a blood thinning medication called Warfarin for the rest of their lives. This is because blood has a natural tendency to clot on certain types of artificial valves and warfarin can prevent these clots from forming. People with tissue valves rarely need blood thinning medicine long term, but may need Warfarin for a few weeks or months after surgery or for other reasons like irregular rhythm of the heart or history of blood clots. Sometimes an irregular heart beat can occur after surgery.

As this can increase the risk of blood clots forming, you may need Warfarin to reduce the chance of this happening. Let your dentist know that you are taking Warfarin before any procedures. If you are started on Warfarin, the ward pharmacist will counsel you about it before you are discharged.

Examples of other types of cardiac surgery

Atrial septal defect

Sometimes at birth, the wall that divides the heart's upper chambers does not close all the way up. This leaves a hole that lets blood flow between the upper chambers of the heart. This is known as an atrial septum defect. The hole may be either sewn together or patched during surgery. These procedures will have been discussed with you by your GP or the specialist doctor or surgeon. Please ask if you have any further questions.

Vertricular aneurysm

Bulging (ballooning) of the heart muscle can occur after a heart attack. This is known as an aneurysm and can affect the heart's ability to pump effectively. This can lead to shortness of breath, pain or irregular heartbeats. The bulge can be cut out or patched. These procedures will have been discussed with you by your GP, specialist doctor or surgeon. Please ask if you have any further questions.

Aortic root surgery

The aorta is the big blood vessel which carries the blood from the heart to different parts of the body. The root is the part of the aorta that is attached to the heart. Occasionally the aorta becomes diseased. This can include an aneurysm (dilatation) or a partial rupture of the aorta. The dilated part can be replaced with an artificial tube. Aortic root replacement may entail reconnecting the main coronary arteries to the implanted artificial tube.

Benefits and risks of Cardiac Surgery

Over the past sixty years cardiac surgery has advanced and progressed at a fast pace. Modern cardiac surgery is RELATIVELY safe, and safety as with other types of surgery, is taken very seriously and is given the highest priority. The risk of undergoing cardiac surgery is dependent on many factors, the type of surgery and the patient. There have been several attempts to create tools to try to assess the risk of surgery.

These tools are called risk scores examples are sts score and euroscore. however the individual patients assessment of risk remains to be the most relevant and applicable to the patient. There is always a discussion between the patient and the surgeon, which involves information about the benefits and risks of surgery, before the informed consent is signed.

The vast majority of cardiac of cardiac surgical procedures have a very low percentage risk. Complications can prolong the period of recovery and hospitalisation after cardiac operations. Some cases are more risky than others and as mentioned above, will depend on the nature of the operation and the condition of the patient. In these cases, usually the balance between benefits and risks are assessed and advised by the surgeon.

The patients wishes and choices are always taken into account. Complications of cardiac surgery can involve any part of the body. Most prominent complications are stroke, bleeding, infection and poor kidney function and irregular heart rate.

Risk is often given in percentages. A large proportion of cardiac surgical patients will have a risk of 1-2 percent of death or major complications and 98 to 99 per cent incidence of survival.

Referral and before admittance for surgery

Before coming into hospital - What you can do?

Initial Consultation with the surgeon

Before your operation, your surgeon will have discussed with you the reasons for your surgery, its expected outcomes (including the risks) and the pattern of your recovery. It is recommended that a member of your family or friend attends this discussion.

It is your right to ask any questions about risks involved in having cardiac surgery. The surgeon in charge will always be willing to discuss any concerns about your operation with you and your family/friend if you wish.

Your feelings

The prospect of heart surgery can cause different emotions in different individuals. Some people feel relief, others feel fearful. It would be unusual to have no worries, fears or doubts. However, it is important to discuss your feelings with someone who cares about you. Even if talking about it makes you a little anxious, it can bring out good feelings.

The healthcare team can discuss this with you during your stay and when at your pre-operative education session. To read about coping with stress and learning relaxation techniques please see the Risk Factor section of this booklet.





Exercise

Your current angina or shortness of breath may be limiting the amount of exercise you do. However it is very important to keep exercising within your limits. This will help to keep you as fit as possible, reduce complications and will help your recovery after your operation. If you get angina or shortness of breath during exercise, use your GTN spray as directed by your GP.

You can also use your GTN spray before you exercise or do any activity you know brings on your symptoms. Regular exercise such as walking will help you keep your weight down, relax your body, enhance your mood and give you confidence.

Diet

Before your surgery try to eat a healthy, well balanced diet. This will help to make sure you are getting enough energy, protein, vitamins and minerals. If you are overweight, losing weight could help your recovery. Carrying extra weight puts strain on your heart and lungs and increases the chances of raised blood pressure, diabetes, stroke and heart disease. Try to lose weight if you can. Aim for gradual loss (1 to 2lbs per week) by making small changes to your diet and lifestyle that you will be able to maintain.

Rapid weight loss is not desirable as it causes loss of lean muscle; which could affect your recovery. However, being underweight could also affect your recovery. If you are underweight you may be at higher risk of complications after your operation, such as infection or poor healing. This can mean you have a longer stay in hospital.



Smoking

The burning of the tobacco from cigarettes produces carbon monoxide (CO), which is a poisonous gas. The CO takes some of the oxygen's place on the blood cells that would normally carry oxygen to your heart and around the body. The blood cells with CO make blood stick together and coat the walls of your arteries with a thick fatty covering. This causes poor circulation and high blood pressure due to less blood getting to where it is needed.

If you smoke then:

- **Your heart is starved of oxygen from the blood and can't work as well as normal.**
- **Your heart gets the same fatty coating as the arteries and this makes it less efficient.**
- **Your heart has to work harder to push blood through the coated arteries.**

For these reasons, if you still smoke, please try to stop before your surgery. For information on what help is available, see the Risk Factor section at the end of the booklet. Cardiac surgery is a great opportunity to stop smoking. If you cannot stop before your surgery, be determined to stop after. Smokers are also more likely to have difficulties with breathing after surgery and this may hamper your recovery.





What will I need for my stay?

There are a few things you need to consider before coming into hospital. Some of these are detailed below. You can use this as a checklist to ensure that you are fully prepared for your hospital stay.

What will I need to pack?

Loose fitting night clothes, dressing gown and slippers (flip-flops and mule slippers are not suitable). Women should bring in good fitting bras. We would encourage that, after your surgery, you get dressed in comfortable day clothes that you would normally wear at home. This is aimed at you getting back to your normal routine prior to discharge.

Medication

Please check and follow the medicines advice given on the letter advising you of your admission. Bring all of the medicine's you have been taking recently in their original containers or boxes. Some of these may be stopped after your surgery so you only need to bring in a small amount of each medicine.

Planning for your return home

You will be in hospital for approximately seven nights. Before you come into hospital, please think about how you will get home. Please arrange for a friend or relative to take you home. You will need some help at home after your operation from friends or relatives, i.e. help with shopping and help with anti-embolism stockings. If this is going to be a problem, then please discuss this with the nurses on admission.



C Hospital stay

About the ward

Ward 216 and ward 217 (surgical high dependency unit) specialises in cardiothoracic surgery (heart and lung operations). People from all over the North of Scotland, Shetland, Orkney, and Tayside are treated in these wards. You will be admitted one or two days before your surgery. If you are admitted on a Friday, you may be able to return home for the weekend if your surgeon agrees.

You will have two wrist bracelets detailing your name and hospital number, date of birth and ward. These are for identification purposes and will remain on for the duration of your stay.

Some patients take longer to recover than others so may need to stay in intensive care for a longer period.

This may mean that other patients operations may need to be cancelled. This is an unfortunate circumstance but unavoidable. However, this only happens occasionally.

You will find your daily routine similar on a day to day basis, i.e. breakfast, getting washed, doctor's rounds, bed-making, exercise, dinner, and so on.

Staff you will meet

You will meet various members of the ward team including your surgeon, anaesthetist, pharmacist, and physiotherapists.

Getting ready for surgery

When you are admitted you will spend the night in ward 216. We will ask you to have a shower before your operation using antiseptic soap. Small valuables can be locked away for safe keeping, but we encourage you to send them home with family.

You should pack your belongings in your bag the evening before surgery so they can be kept safe in ward 216 until you come back to the ward. You may be prescribed a sleeping tablet to ensure a good rest before your surgery. If not, and you would like one, please ask one of the nurses.

Tests

Some routine tests will be carried out before your surgery. These will include an ECG (electrocardiogram or heart tracing), chest X-Ray, and blood tests. Your height, weight, blood pressure, temperature and a sample of your urine will also be checked.

In hospital



MRSA screening

You will also have swabs taken from your nose and perineum (groin area) to find out if you have MRSA (Methicillin resistant staphylococcus aureus). MRSA screening is now routine for every patient admitted to help us prevent any complications related to the infection. Treatment usually involves a course of antibiotics and skin cleansing. The nursing and medical staff will discuss any treatment you may need with you and your family. They can also give you more information on MRSA.

Day of surgery

Medication may be prescribed by the anaesthetist to make you feel relaxed before your surgery (this is known as a pre-med). This will be given about an hour before the time you are expected to go to theatre. If you have dentures, these will be removed and put in a bowl, which will then be kept with your belongings. You will be taken to theatre in your own bed wearing a theatre gown.

Once in the theatre complex you will be taken to the anaesthetic room where the anaesthetist will insert a needle into the back of our hand and give you a drug through this to make you go to sleep. While you are asleep, a tube will be inserted into your mouth and down into your lungs to help with your breathing when you are unconscious. You will not be aware of this being done.

Guide for relatives and visitors

Family and friends are important to you while in hospital and they can make a positive contribution to your recovery.

Visiting

NHS Grampian operates person centred visiting. Whilst people can visit at any time, you will need to rest. Your visitors may be asked to leave your room during procedures and during doctor's ward round to protect patient privacy.

Overnight accommodation

A list of bed and breakfast accommodation close to the hospital is on the NHS Grampian website: www.nhsgrampian.org under Aberdeen Royal Infirmary Travel and Accommodation. A copy is also available on request from Ward 216.



Bus

There are regular bus services between the hospital and the city centre from where you can access bus and rail transport to other areas.

Taxis

There is a freephone for a taxi service at the reception desk on the main concourse.

Parking

There is parking at the Foresterhill site in the multi-storey car park, however it can be difficult to find a space at peak times. For further information see: www.nhsgrampian.org or your Patient Admission and Information booklet.

Cardiac Intensive Therapy Unit (CITU)

After your surgery you will be taken to the CITU where you will be kept asleep until your body has recovered sufficiently from the operation. This can be for a few hours or more. The breathing tube will remain in place and you will be breathing with the aid of a machine called a ventilator. The tube will still be in place and the machine doing your breathing for you for a short time after you waken up. During this time you will not be able to speak or eat and drink.

The nurses will communicate with you by asking questions which you can answer with a nod or shake of the head. The tube will be uncomfortable at this time but try to relax and let the machine do the breathing for you. The tube will be removed after a short time and you will be able to speak again. You will be given fluids through a needle in the back of your hand while you are on the breathing machine. When the breathing tube is removed you can have small amounts of fluid once you feel able.

Surgical High Dependency Unit (SHDU)

Once you are fully awake and your condition is stable you will be taken to the SHDU in Ward 217. This is usually one or two days after surgery but can be longer.



Monitoring

You will be attached to monitoring equipment which will continuously check your heart rate and rhythm. The monitoring equipment will automatically check your blood pressure three to four times every hour to make sure that there are no problems with your circulation. It will also continuously check the amount of oxygen in your blood by the means of a probe attached to your finger, earlobe or toe.

One in three patients can develop an irregular heart rhythm called atrial fibrillation. When this occurs the heart rate can become very fast and the rhythm very irregular. You may feel this as a fast beating in your chest. It is very easily treated with a medicine called amiodarone. This helps return your heart to its normal rate and rhythm. It is initially taken three times a day reducing to once a day. If you are started on amiodarone you will be likely to be discharged home with it. You may also need to start a blood thinning medication when on amiodarone.

Oxygen

It is very important that you have enough oxygen circulating in your blood. Oxygen is needed by your body to help it work efficiently. Too little can cause your heart to work too hard, you can become confused and disorientated and the healing of your wounds can be hindered.

Several things can be done to help you maintain the oxygen levels in your blood. The most important of these is giving you oxygen enriched air to breathe through a facemask.

This oxygen may be passed through sterile water making it moist. This helps to loosen any mucus which will have collected at the bottom of your lungs and makes it easier to cough it up, so helping to prevent a chest infection.

Many people dislike using the facemask and as soon as your condition allows, the facemask can be replaced by nasal cannulae, two little prongs attached to tubing which fit just inside your nostrils. It is important that you use the oxygen while it is required. It is there to help your recovery.

Tubes and drains

There will be a cannula (tube) inserted into your neck. This allows any medications that you need to be given straight into your bloodstream. From your chest there will be two or three drains to remove excess fluid from your chest into a drainage bottle at the side of your bed. The drainage of this fluid is assisted by suction, which makes a bubbling noise. A urinary catheter (tube) will be inserted into your bladder when you are asleep.

You may also have small blue wires protruding from the lower end of your wound. They are called pacing wires and will have been put in during your surgery as a precaution against your heart rate becoming too slow. These wires can be attached to a pacing box which can stimulate the heart to beat at a safe rate until the heart returns to its normal rate. This is not always required, but if it is needed it is only for a short time. The pacing wires are removed by the nurses approximately 5 days after your operation.

Most of these tubes are inserted during your operation and will be removed by the nurses when your condition is satisfactory, and probably before you are transferred back to the main ward. When the drains in your chest are being removed you may be given a gas to breathe. This is a painkilling gas that will make you feel drowsy, but will make the procedure less uncomfortable.

Wounds

You will have a large wound down the centre of your chest. There are no stitches as the wound has been closed with dissolvable stitches under the skin. If you have had bypass surgery, you may have a wound on your leg or arm from where the veins or arteries were taken to use in the bypass. Clips may have been used to close the wound. These will stay in place for ten days.

Some patients will be asked to wear a support called a chest hugger which supports your chest wound and prevents problems with wound healing. Female patients may be fitted with a special bra which has the same function. The surgeon will advise the nurses who should wear this. It should be worn day and night if possible, and you should continue to wear it for 4 to 6 weeks after your surgery at home.

Ted Stockings

Most patients will have to wear special anti-embolism stockings to prevent blood clots and help the blood circulation in your legs. The nurses will change these daily when you are in hospital. Please note how this is done so you can inform the person doing this for you at home.

Pain

Pain is something you do not have to put up with. If you have pain you cannot move properly, you cannot do your deep breathing effectively, and it makes you feel miserable. To keep pain to a minimum you will be given painkilling medication. This method of pain relief will be decided by the medical staff. All patients will be given painkillers by mouth regularly, usually paracetamol, but they may also be prescribed medicine which will be given by injection.

This may be given by a system known as patient controlled analgesia (PCA). With this system the medicine is given directly into the bloodstream through a needle in the back of your hand. You control when and how often it is given by pressing a hand held control which is attached to the pump. If you feel pain, use the pump. PCA will only be required for 1-2 days after your surgery.

Painkillers will be given to you throughout your stay. Please take all the painkillers offered and tell the nurses as soon as you feel sore so that your pain can be kept under control. If you feel sick, let the nurses know so that they can give you medication to help with this.





Medication

After your operation you may no longer need some of the medication you took before, but you will have new ones to take.

- **If you already take blood thinning medicine and cholesterol lowering medicines, you will continue to do so. Any non heart medication you have been taking for other conditions will be re-started gradually during your stay when necessary.**
- **Paracetamol has already been mentioned and will be given regularly. You may also be prescribed a stronger painkiller (Dihydrocodeine or Tramadol) which can be taken as well. We usually try to cut back the stronger painkillers before you go home.**
- **As cardiac surgery can make you more likely to develop stomach ulcers, all patients are prescribed Ranitidine or Omeprazole (a tablet which will cut down the acid in your stomach while you are in hospital) or the medication you were previously using for this problem.**
- **You will be given Lactulose or Laxido and Senna to keep your bowels active and prevent straining. It is important that you take these medicines after your surgery to prevent constipation. You may still need laxatives after you go home if you are still taking strong pain medication.**
- **Most people will be given a small injection in the abdomen once a day. This injection is Called Dalteparin. It keeps your blood thin, helping to prevent the development of clots in your legs while you are less mobile. The injections will stop when you go home.**
- **You may need to re-start some of the heart medication you were previously taking, most often the beta blockers (like Atenolol or Bisoprolol) for high blood pressure, and to slow your heart rate.**
- **We may either re-introduce or start an Angiotensin Converting Enzyme (ACE) inhibitor which helps the function of the heart and lowers blood pressure. We normally change your ACE inhibitor to Ramipril.**
- **You may also need to take water tablets (diuretics) such as Furosemide to help remove any excess water. If you go home with this medication then we will ask your GP to review it regularly.**
- **If you are started on amiodarone you will be discharged with it. If your heart rate and rhythm has returned to normal when you are seen in the clinic it will be stopped.**



Other new medicines may be prescribed and these will be discussed with you prior to discharge. Depending on the type of surgery OR to prevent blood clots forming, which can be a risk if your heart rhythm becomes irregular you may be prescribed a tablet to stop your blood clotting as quickly as before. These tablets are known as anticoagulants.

The anticoagulants we tend to use are warfarin, apixaban, edoxaban or rivaroxaban. If you are started on one of these medications then the pharmacist will discuss it with you before you are discharged from hospital.

If you are started on warfarin, your dose may vary day to day depending on the result of your blood test, known as an INR. This will be carried out daily while you are in hospital but less frequently by your GP or practice nurse once you are discharged home and stabilised on a regime. The pharmacist will explain this in more detail to you if you are to go home on warfarin.

If you were taking aspirin prior to admission you will likely to continue on aspirin and will remain on this for life, unless otherwise advised by the surgeon or GP. If you develop a chest or wound infection, you may need antibiotics. These will either be given as an injection into your bloodstream through a needle in the back of your hand or as tablets. You may need to continue these in tablet form when you go home to complete the course.

Hygiene

When you are in Ward 217, the HDU staff will help you with your personal hygiene. Once you have been transferred to the ward you can have a shower.

You can have help with this until you can manage on your own. Let the shower water run over the wounds without rubbing, and do not use talcum powder near your wounds.



Diet and fluids

You will be given a light meal, probably soup and ice cream, shortly after your transfer to Ward 217 HDU. We will encourage you to drink plenty fluids, at least one glass every hour. You may have nausea. This is most often due to drugs given during anaesthesia. Medications can be given to relieve the nausea but you may need to have fluids through a tube in the back of the hand until you are able to drink sufficient quantities.

Once you are back in the main ward (Ward 216) you will find that your appetite improves as you feel better. Eat as well as you can and continue to drink plenty of fluids. You may find that your sense of taste is quite poor; do not worry, this is normal after an operation and it will improve.

However, if you find your appetite is not returning, you may be referred to a dietician. If you are unable to take an adequate diet, you may be given some high protein drinks prescribed by the dietician.

Below are some helpful tips for dealing with a poor appetite:

- **Try to eat small, frequent meals as large meals can be off-putting.**
- **Try not to have a drink just before or during your meal as this can fill you up.**
- **Take regular snacks between your meals, handful of dried fruit, unsalted nuts, or a plain biscuit.**
- **Instead of water, tea or coffee, try to drink milky drinks (such as Horlicks).**



Sleep

The night nurses will help you to get comfortable for sleeping. You may find that you are unable to sleep. This can be for a number of reasons. Your sleep pattern may be disrupted as a result of the anaesthetic and being sedated in the CITU (Cardiac Intensive Care Unit).

It may take a while for this to settle. The medical staff may be reluctant to give you sleeping tablets the first night in the HDU and, if so, try not to worry too much about the lack of sleep. Keep relaxed and try to rest as much as possible. It may be that you are sore. If so, ask for pain killers.

The HDU can be a noisy place at night and the staff will do all they can to keep the noise to a minimum but some noise is inevitable. Again, try to keep relaxed and rest as much as possible.

Once back in the ward you should be able to sleep better. If you continue to be unable to sleep it may be possible for you to have a sleeping tablet.

A few people have feelings of disorientation and hallucinations after cardiac surgery. While this can be unpleasant, it is not a permanent condition and will usually last no longer than a few days and is usually worse during the night.

Delirium

A condition of delirium is a common complication of any type of surgery. This can be caused by the operation itself but also lots of other things can trigger it. Delirium can come on very suddenly and cause you to become confused. Sometimes it can make people very sleepy, agitated or restless. It can also affect your mood, mobility, appetite and sleep. Delirium usually settles down quickly in the hours and days after your operation but it can be quite frightening for you or your loved ones to experience.

If you notice a change in yourself or your relative while in hospital please speak to staff so we can help to explain what is going on and investigate and manage the things that have triggered your delirium. Please ask for a copy of the 'think delirium' information leaflet which gives lots of tips for how friends and family members can help if you develop a delirium.

Physiotherapy and exercise

After your surgery you will be assessed and reviewed as necessary by a physiotherapist. It is very important that you try to follow the advice from the physiotherapist and increase the exercise you do on a daily basis.

On removal of your breathing tube you will be taught how to take a deep breath and how to cough effectively while supporting your wound. You will be encouraged to get up and sit in a chair and march on the spot with assistance to help prevent chest infection.

When you transfer to Ward 217 (HDU) the physiotherapist will aim to help you walk, if appropriate, or continue to increase marching on the spot. Please continue to carry out deep breathing exercises and use the supported cough technique taught to you in the cardiac intensive care unit.

You will be encouraged to participate in a walking regime on Ward 216 which involves walking around the ward area using the red heart signs suspended from the ceiling to set your personal goals and help you progress your walking distance on a daily basis. You will also receive an opportunity to practice stairs.

Finally, the physiotherapist will provide you with an exercise diary to be used in the first six weeks following your surgery, and will discuss and advise on how much exercise you should do at home and give you exercises to minimise shoulder stiffness. You will also be informed of where your nearest cardiac rehabilitation class is and what it entails, and a review of post operative precautions for your chest wound will take place.





Emotions – highs and lows

After surgery you may have a feeling of wellbeing and relief at being over the operation. This mood can sometimes amount to euphoria. It is important to be aware of this symptom to try to stabilise your mood before you go home. It is also common to have a period of reaction or depression which may set in 4 to 5 days after the operation.

You may feel quite depressed and feel tired, weak and lack appetite. Although this is quite common, not everyone goes through this. Nothing has gone wrong and you should leave matters for nature to resolve.

It is common for people to cry more easily or be more emotional after any major surgery. It is also common to have bad dreams, hallucinations or trouble keeping your mind on certain things.

These things are all related to anaesthesia, medications and loss of sleep. As you become rested and get your strength back you will feel that you are doing better each day. Talking to people about your mood or feelings will help. If you or your family are concerned about your mood, talk to your healthcare team.

Going home

Medication and additional support services

Around seven days after your surgery it will be time to go home. Before going home a letter will either be sent to your GP or given to you to give to your GP. You will also have a copy of this with details of what medication to take and also any changes that have been made to your medication. You will also be given at least a 14 day supply of your medication. This letter will detail what medication to take and also any changes that have been made to your medicines.

If you are given a letter to take to your GP, please hand it in as soon as possible so they have a list of the medications and can issue a repeat prescription when required. If you are taking Warfarin, you will need to have your blood checked by your GP practice so that you can take the correct dose. This initially may be required daily. We will give you instructions about this before you go home.

We prefer if you go to the practice to have this done, but if this is not possible you need to let the nurses on the ward know so that they can arrange for a nurse to come to your house to do this.

Travelling home

It is better if you can arrange for someone to take you home with private transport but, if this is not possible, other transport can be arranged. These arrangements have to be made well in advance of your discharge otherwise there could be delays in you getting home.

We advise that you have someone at home with you or at least checking on you regularly for the first couple of weeks after your surgery as you will need to get plenty of rest. You should be able to shower yourself and make a cup of tea or heat up meals, but you will need help with shopping.

Weeks 1 to 6 after surgery

You will feel very tired for the first week or two as your body continues to repair itself. You will have some pain or discomfort around the chest, back and shoulders. This is not the angina pain you had before your surgery, but comes from the sternum (breast bone), muscles and ligaments injured and stretched during your surgery.

Remember to take your pain relief regularly in the early weeks. Other common feelings/symptoms which occur after surgery, (most of which should clear during the first few weeks) may include:

- **Breastbone edges “grate together.”**
- **Visual hallucinations.**
- **Blurred vision, spots before the eyes.**
- **Reduced appetite.**
- **Sweatiness – hot and cold.**
- **Palpitations.**
- **Thumping noise in ears.**
- **Valve clicking.**
- **Insomnia, nightmares.**
- **Lack of concentration.**
- **Emotional instability.**
- **Change in values.**
- **Pins and needles in hands and arms.**
- **Sore throat, loss of voice.**
- **Drug rash.**
- **Constipation.**



Pacing yourself (Remember everyone is different)

When starting activities again after surgery it is important to pace yourself. You should set yourself limits. A trap many people fall into is where you have a day when you feel well and do more than the limit you had set, and as a result you have to rest for the next few days. The rest days undo the benefits of your hard work. Pacing yourself allows you to make gradual, steady progress. The community nurse/health visitor will discuss this with you in more detail, helping you set realistic goals.

Pain relief

You will have been prescribed medication to control pain. It is important to be free from pain. Your mood will be better, your posture will improve and you will be more likely to exercise. Take your medication regularly. You will soon know when you are ready to wean yourself off them.

Scar care

Once the wounds have healed, when all the scabs have gone (breast bone and leg/arm), you should use a non oiled, non scented based cream and begin gently massaging the area.

TED stockings

If you have had CABG, you will need to wear your anti-embolism stockings to help the circulation in your legs. Please note that it's normal to have swelling on the side of the leg where the vein has been removed.

- 1) Try to keep your legs raised at hip level or higher when sitting in the chair.**
- 2) First week at home, remove the stockings at bedtime and re-apply in the morning.**
- 3) Second week at home, remove in the evening and reapply in the morning.**
- 4) Third week at home, remove in the afternoon and re-apply next morning.**
- 5) Fourth week at home, try leaving the stockings off all the time.**

If your legs and ankles swell when your stockings are off then go back to wearing them all the time for 1 week, then start at instruction 3 again. If the stockings fall down be sure to pull them up, as they will constrict the circulation in your legs. Increase your mobility, as you feel able over the coming weeks. This will help the blood circulation in your legs. You will need someone to help you with this as, if you try to do this yourself, you can put too much strain on your chest wound. The nurses will change these daily.



Note how this is done as you can then inform the person doing this for you at home.

Sleep

You may find that you have difficulty sleeping once you are home. This is common for a lot of people but not something to get too concerned about. There is no such thing as an ideal length of sleep. Some people need 10 hours, others need 3 hours. There is no danger in losing a few hours sleep. Your body will take all the sleep it needs.

However if this persists for a longer period of time you may want to discuss it with your GP. The Occupational Therapist at the Cardiac Rehab classes can provide you with some information on helping your body return to its natural sleep pattern.

Symptoms to report to your GP

If you have worsening symptoms of angina and/or shortness of breath, contact your GP urgently. If you have any of the common symptoms below, be sure to let your GP know:

- **Palpitations.**
- **Dizziness.**
- **Swelling of hands, feet or ankles, associated with shortness of breath (please note that for the first few months some swelling is normal after removal of the vein).**
- **Rapid weight gain.**
- **Soakage from wounds.**
- **Pain or inflammation from wounds.**
- **Feeling feverish or temperature above 38 degrees C.**

Handy Tips for your first 6 weeks after Surgery

Start with light tasks and gradually increase the physical and mental demand of the activity:

- **Gardening begin with light weeding of pots or raised beds, watering with a hose, and progress to heavier tasks such as digging when the breast bone is fully healed, around 16 weeks, to minimise problems with the breast bone healing as this is a strenuous arm activity.**
- **Use both hands when pulling clothes out of a washing machine, putting food in the oven, vacuuming, picking things up and carrying shopping bags etc.**
- **Re-organise home and work environment to reduce physical demands (for example keep items on work surface tops rather than low cupboards).**
- **Sit down to prevent excessive bending and twisting (for example when taking clothes out of the washing machine and ironing).**
- **Avoid over stretching. Ask someone to help or use long handled equipment (such as a long handled duster).**
- **Avoid twisting when putting items in the boot of a car, making beds etc.**
- **Ask for help when you are tired, in pain or attempting a task for the first time since surgery.**

Household activities: How soon can I do this?

Using the oven	Immediately
Making a cup of tea	Immediately
Cooking on top of the stove	Within a few days
Waist level dusting	1 week
Making beds (not changing them)	1 week
Window cleaning (indoors)	4 to 6 weeks
Ironing	2 to 3 weeks
High dusting, vacuuming	4 to 6 weeks
Mopping floors	4 to 6 weeks

This is a rough guide because everyone progresses at different rates.

Walking

Walking is the best form of exercise. It is important that when you go home, you try to build on the level of walking you were managing on the ward. Start with two short walks a day, for example to the bottom of your garden or to the end of your road. Build up your exercise levels in easy stages.

If you were fairly fit and active before your surgery, choose a distance easily managed (always remember about the return journey too) and aim for somewhere flat. The aim is to manage easily and build up to a distance that makes you work harder.

Remember exercise makes you breathe faster and feel warmer but should not make talking difficult. If you were really quite unfit before your surgery or you need to build up your exercise levels more gradually, start with more gentle exercise such as walking around the house or try marching on the spot for short periods.

It is important to think about how you feel while exercising:

- **Are you ready to increase the distance?**
- **Could you walk faster?**

Both these things will make you work harder. Remember not to overdo it, as rushing will not speed up your recovery. Start steadily and gradually increase your walking as you are able. Remember to include stairs and build up to doing inclines/hills.





First couple of days

Take it easy, ideally walk on the flat and have someone with you.

After 2 to 3 days

Walk approx 5 to 10 minutes twice a day.

By the end of the second week

Aim to be doing 15 minutes a day

By the end of the third week

By now you should aim to be walking 15 to 20 minutes twice a day with 5 minutes of brisk pace. If you found your walk is fairly easy for two days in a row then increase the distance. Continue with this new distance until it becomes fairly easy, then increase again.

By the end of the sixth week

You are aiming for 20 to 30 minutes twice a day. Depending on how you feel, you may be able and want to do more walking, this is absolutely fine. As a general rule, start on the flat and work up to hills. Begin walking with a slow pace gradually picking up the pace until you feel comfortably out of breath, you should always be able to speak. Then gradually cool down before completely stopping exercise.



Hints to help you

On first few walks take a partner or a friend with you. This helps increase confidence for both of you. How far you go depends on how you feel. You should return home feeling comfortable, not exhausted.

Becoming slightly out of breath (breathing faster than normal) and feeling an increase in your heart rate is normal when exercising. If you are too breathless to hold a conversation you are probably overdoing the distance or pace. As a guide your breathing and heart rate should return to normal after a short rest.

If you stop exercising for any reason (for example if you have a cold or flu), when you start exercising again, start at a reduced level and gradually build up. Every day is different! Some days you will have more energy and be able to go further than other days. Be kind to yourself and listen to your body and remember this exercise advice is general and everyone recovers differently after surgery. Think positively and assess your progress over a week rather than a day.



Shoulder exercises

To prevent stiffness while your breastbone is healing, keep doing your shoulder exercises at home. The exercises should help you to regain/maintain your normal range of shoulder movement.

- 1. Stand with hands clasped in front of you.**
Lift both arms straight forward over your head.
Repeat 5 times, keeping your back straight.

- 2. Shrug your shoulders up and down.**
(Repeat 5 times)

If you notice your breastbone clicking please don't do these exercises and see your GP.

Leisure Activity: How soon can I do this?

Gardening (light)	4 to 6 weeks
Driving	6 weeks
Snooker	12 weeks (to allow bone to heal and reduce the risk of shearing forces generated when positioning the cue)
Table tennis and racquet sports	12 weeks
Swimming	12 weeks (only if all wounds healed)

This is a rough guide because everyone progresses at different rates.



Driving

If you have recovered well from your surgery, you may begin driving after about 6 weeks. Advise your insurance company of your surgery before driving again. Your driving position should be comfortable with minimal pressure on the healing breastbone. A rolled up towel placed around the seatbelt may help. Some driving manoeuvres (for example reversing or putting on the seatbelt) may cause pain in your wound at first, so take care. You may find your concentration is worse, so avoid rush hour traffic and driving for long periods.

Diet

When you feel back to normal, aim to follow a balanced diet to prevent further heart problems and to help keep you healthy. More details on diet are later in this booklet.

Partners and family issues

If you have a partner they may also have increased anxiety and depression. These kinds of problems can add to the overall tension within the partnership. Often the partner finds it hard to strike a balance between being overprotective and not helping enough. They are often reluctant to make demands of you, cause any emotional upsets or allow normal activities to be resumed. When both the patient and family suffer from the symptoms of depression and anxiety, serious conflicts may develop in the first few months after surgery. Many partners worry that their relationships will be affected. Talking about these problems will help.



Sexual activity

A common myth is that having sex after heart surgery will damage the heart or bring on a heart attack. This is not true. While you are recovering from your heart surgery you may resume full sexual activity as soon as you feel able to do so. The effects on your heart can be likened to any other form of exercise or physical activity where your heart rate increases, your blood pressure rises and your breathing rate slowly increases. No more exertion should be used than climbing two flights of stairs at a steady pace.

As you recover, try touching, holding and caressing at first as these activities need very little energy. Many people find that these activities allow them to return slowly to a full sex life. As you gain confidence you will begin to feel at ease with yourself and with each other. It can also help you develop your physical and emotional wellbeing.

Follow Up

You may be offered the following:

- **A home visit by a member of the cardiac rehabilitation team.**
- **Outpatient appointment with one of the medical team around 6 weeks after surgery.**
- **Outpatient cardiac rehabilitation programme.**
- **Long term reviews by the cardiac nurse in your GP surgery.**
- **Long term maintenance cardiac exercise classes locally.**
- **Individual outpatient occupational therapy sessions, as required.**

Ask any member of your health care team for information on any of the above.



Weeks 6 to 12 after surgery

Household activities: How soon can I do this?

Changing beds	6 to 8 weeks
Lifting heavy objects (basket full of washing)	16 weeks
Hanging heavy curtains	16 weeks

Exercise

Continue your daily walking programme.

Starting cardiac rehabilitation

You will be invited to join a programme in your area 4 to 6 weeks after your surgery. You will be offered:

- **A one-to-one assessment of your heart function by either the physiotherapist or cardiac nurse.**
- **A prescribed exercise programme, twice weekly for eight weeks.**
- **Personal counselling and education of risk factors.**
- **Help to recognise and change unhealthy habits.**
- **Relaxation training.**

Going along to these sessions will increase your exercise ability and your confidence while under supervision. It will help your recovery and aid you back to as full a life as possible.

Leisure Activities: How soon can I do this?

Bowling/golf	8 to 12 weeks
Cycling	12 weeks
Aerobics	12 weeks
Swimming (wounds fully healed)	12 weeks
Walking	12-14 weeks
Gardening (heavy)	12-14 weeks

Household activities: How soon can I do this?

Painting and decorating	16 weeks
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This is a rough guide because everyone progresses at different rates.



Returning to work

If you were working up until your operation, you should be fit to start work again 8 to 12 weeks afterwards, depending on your type of work and progress after surgery. We recommend that you have a phased return to work (for example, do part time hours for a couple of weeks before going back full-time).

When you see the surgeon at the outpatient department six weeks after surgery, please discuss returning to work. You can also get further advice from your healthcare team.

Looking ahead

Exercise

Keep doing cardiovascular exercise. For most people this means at least five 60 minute sessions every week which includes a 15 minute warm up and a 15 minute cool down. Be aware of how much you are exerting yourself, regardless of the type of exercise you do. This means it feels good, you feel puffed, you feel sweaty but you feel as though you can keep going.

Suitable examples of cardiovascular exercises include: brisk walking, cycling, gym programmes, dancing, swimming and senior exercise classes. For more high intensity/competitive or endurance sports such as football, squash, long distance running or martial arts etc please discuss these with your GP/Cardiologist.



Risk factors of heart disease

HGV and PSV driving

You must be 12 weeks after surgery to be able to return to heavy goods and public service driving. You will need to be reviewed by your employer and may have to amend/renew your licence before driving again. You must advise the DVLA as well as your insurance company when you are ready to restart.

Holidays

Flying

There are generally few restrictions on flying, and general advice of protecting yourself against developing clots in the legs should be used.

Travel insurance

You can check the British Heart Foundation website for further information on travel insurance after surgery.



Risk factors of heart disease

You may think it is too late to think about prevention, but there is still a lot you can do to prevent your heart from getting any worse. You can reduce your chances of having problems by reducing your risk factors. This is especially important after CABG surgery as it means your new blood vessels will be less likely to furr up.

Risk factors are divided into two groups:

Non-modifiable - Those over which you have no control over.

Modifiable - Those that you can influence.

Non-modifiable risk factors

Hereditary

If you have a family history of heart disease you are more likely to develop coronary heart disease (CHD) than someone who has no family history.

Age

As we get older our risk of CHD increases. Men over 40 and women over 50 are at a higher risk for CHD than younger people.

Gender

Men tend to develop CHD at an earlier age than women. However, after menopause, women are just as likely to develop CHD as men.



Modifiable risk factors

Smoking

Quitting smoking is the best thing you can do for your heart. People who smoke have twice the risk of a heart attack than people who do not smoke.

Physical inactivity

People who are inactive are at risk. Exercise lowers the blood pressure, improves cholesterol and blood sugar levels, reduces weight and improves the efficiency of your heart.

Obesity

Being overweight puts a strain on your heart and can increase the risk of having high blood pressure, high cholesterol and diabetes.

Stress

Constant or unrelieved stress can make the heart work harder and increase blood pressure and cholesterol levels. People under stress often eat more, drink more and smoke more to cope with the stress. All these factors can lead to the development of CHD.



Excessive alcohol intake

Too much alcohol can lead to high blood pressure, increase the cholesterol in the blood and lead to weight gain.

High blood pressure (hypertension)

Although the exact cause of high blood pressure (BP) is not known it can be controlled. Over time high BP damages the arteries and makes it easier for fatty deposits to build up on the inside of the artery wall. High BP makes the heart work harder causing it to enlarge and weaken over time, so it is important to control high BP.

Diabetes

If you have diabetes, good control is essential so that it can reduce the risk of heart problems. By following your management plan and committing yourself to changing your risk factors, this will give you a healthier life and a healthy heart.



Diet (The Eat Well Plate)

The Eat Well Plate, (also known as “the balance of good health”) is pictured below. It shows the five main food groups and represents the recommended balance between these groups. Each different food group will be discussed individually over the next few pages.

Bread, rice, potatoes and pasta (starch or carbohydrates)

These types of food should be included at each meal as they provide you with energy. Try to choose wholegrain starchy foods, like wholemeal bread and wholegrain cereals (for example Branflakes® and Weetabix®) as these contain more fibre. Fibre can help keep you full for longer and keeps your bowels regular. Also, soluble fibre found in oats, fruit and vegetables, beans and pulses can help to lower cholesterol.

Fruit and vegetables

Aim to eat 5 portions of fruit and vegetables every day. This can include fresh, frozen, dried, juiced and tinned fruit and vegetables. You should try to have a wide variety of fruit and vegetables and make sure you don't cook fruit/vegetables for long periods as this can destroy the vitamins.

Note: Fruit juice, dried fruit and beans/pulses only count once towards your 5 portions of fruit and vegetables each day.



Department of health in association with the Welsh Assembly Government and the Food Standards Agency in Northern Ireland



Meat, fish, eggs and beans

Use lean cuts of meat, trim off visible fat and remove the skin.

Try to avoid adding extra fat during cooking (frying). Grilling, baking, roasting, steaming and using the microwave are healthier alternatives. Try to limit the amount of meat products you eat as these can be very high in saturated fat (fat that increases cholesterol) for example burgers, sausages, pies and tinned meat.

You should aim to include 2 portions of fish in your diet each week, one of which should be an oily fish such as salmon, fresh tuna, mackerel, sardines, pilchards, trout or kippers.

Note: Tinned tuna does not count as an oily fish.

Milk and dairy foods

Full fat dairy foods like butter, cream, cheese and full fat milk are high in saturated fat. However, dairy foods are a good source of protein, calcium and other vitamins and minerals. You should try to choose lower fat alternatives whenever you can for example semi-skimmed and skimmed milk, low-fat yogurt, Edam and cottage cheese. Instead of using cream in cooking or on desserts, try using low fat yogurt or crème fraiche. Use a strong cheese in cooking so you need to use less of it and use grated cheese in sandwiches

Foods high in fat

You have probably had your cholesterol level measured by your doctor; you may even be on medication to help lower your cholesterol.

There are two types of cholesterol found in the blood:

- **LDL cholesterol, the bad cholesterol that can increase risk of heart disease and stroke.**
- **HDL cholesterol, the good cholesterol that protects against heart disease and stroke.**

The types of fat you eat can affect your cholesterol level, as explained in the following section.



Saturated fat

Saturated fat is found in animal products like butter, lard, ghee, cheese and full-fat dairy products. Cakes, biscuits, chocolate, crisps, pies, butteries, takeaway meals and chips are also examples of foods high in saturated fat. Saturated fat can increase LDL cholesterol levels and lead to narrowing of the arteries which increases risk of heart attack and stroke. You should try to reduce intake of this fat.

Unsaturated fat

There are two types of unsaturated fat, these are better for your heart than saturated fat:

- **Polyunsaturated fat: This type of fat is found in oily fish, sunflower oils/margarines. It does not raise 'bad' LDL cholesterol but can reduce 'good' HDL cholesterol. You should use this type of fat sparingly.**
- **Monounsaturated fat: Found in olive oil, rapeseed oil and margarines made from these oils, nuts and avocados. This fat does not raise 'bad' LDL cholesterol and has no effect on 'good' HDL cholesterol. You should try to use this type of fat instead of saturated and polyunsaturated fats.**
- **Remember: All types of fat are high in calories and too much can cause weight gain. You should try to cut down on the total amount of fat you eat but when you do use fat try to use the healthier monounsaturated types.**

Sugary foods

Having too many sugary foods (for example sweets and fizzy drinks) can cause weight gain. These types of food often contain no vitamins and minerals, so try to limit the amount you take.

Salt

Too much salt in your diet can raise your blood pressure. The recommended maximum amount is 6 grams a day, although most people use more than this. Processed foods (for example ready meals, pizza, crisps and nuts, tinned soups and meat products) can be very high in salt. Try to avoid adding salt to your food at the table and keep salt added during cooking to a minimum. Pepper, herbs and spices can be used as an alternative to salt to season your food. Salt substitutes (for example Lo-Salt®) are not recommended as they can be harmful to some people.

Underweight or poor appetite

Below are some tips for you if you're keen to gain weight before surgery or have problems with poor appetite after surgery. You may be concerned about adding 'unhealthy foods' into your diet, particularly when you have heart problems. The suggestions below are high calorie foods, but healthier alternatives:

- **Use generous amounts of pure oils and pure oil spreads, olive oil, rapeseed oil in sauces and dressings or used to fry foods, olive oil and sunflower oil spreads on bread, biscuits and cakes.**
- **Use fortified milk on cereal, in drinks (tea, milkshakes, hot chocolate) or to make milky puddings and sauces (custard, rice pudding, cheese sauce) To make fortified milk add 4 tablespoons of skimmed milk powder to 1 pint of semi-skimmed milk.**
- **Add avocado into salads, sandwiches or have alone as a snack.**
- **Add a small amount of cheese to your foods (scrambled egg, vegetables, soups); use reduced fat cheese or Edam to make this healthier.**
- **Use reduced fat mayonnaise/salad cream generously.**
- **Add sugar to drinks, stewed fruits and breakfast cereals.**
- **Try supplement drinks or soups available from chemists and supermarkets (such as Complan®, Build Up®).**

If you have a severely reduced appetite or significant weight loss, dietitians suggest that despite your heart problems you should eat anything you fancy, including foods usually considered unhealthy (for example chocolate, cakes, crisps and fried foods). If you are not already seeing a dietitian your GP can arrange an appointment for further advice including the use of prescription nutritional supplements if required.

Alcohol

Stick to safe limits, for women 2 to 3 units a day and for men 3 to 4 units a day. Remember to have at least 2 alcohol free days a week.

The recommended weekly limits for alcohol are:

Women maximum	14 units/week
Men maximum	14 units/week

1 unit = ½ pint beer/lager/cider

Small glass of wine (125mls)

Measure of spirits (25mls)

Moderate alcohol intake (1 to 2 units a day) can be protective against heart disease but this effect is lost when you go over the recommended intake. Remember that alcohol contains calories so if you are trying to lose weight it is a good idea to limit how much alcohol you drink.





Smoking

It is bad for your health and in particular your heart. Stopping smoking is not easy, especially when you are anxious and under stress, but we hope the following may help:

- **Decide on a day and stick to it.**
- **Try to change your routines and avoid situations where you'll want to smoke.**
- **Try just taking one day at a time.**
- **Keep going; remember why you are giving up.**
- **Contact your GP surgery for information on counselling and replacement therapies.**
- **Contact your local Smoking Advice Service on free phone 0500 600 332, for free information, advice and support.**

The benefits of not smoking

- **In 24 hours, your CO (carbon monoxide) levels go back to the level of a non-smoker!**
- **You'll be healthier and breathe more easily.**
- **You'll get rid of your smoker's cough.**
- **You'll suffer fewer colds and infections.**
- **Your skin condition improves.**
- **You'll smell fresher and be less likely to have bad breath, stained teeth or fingers.**
- **Your sense of taste will improve.**
- **You'll save money.**

Stress management

Stress is an unavoidable fact of life. Everyone experiences stress in one form or another. A certain amount is positive - it keeps you on your toes. Too much can cause physical problems such as: back pain, headaches, sleep loss and problems such as reduced concentration, reduced memory, anger and frustration.



Ways to manage stress

- **Learn to relax - Everybody can teach themselves to relax. Just a few minutes of peace and quiet every day will make a big difference. Try it.**
- **Talk it over - When tensions build up, discuss the problem with family, friends or with your healthcare team.**
- **Plan your work - Tensions and anxiety build up when your work seems endless. Plan and prioritise your work to use time and energy more effectively.**
- **Be realistic - People who expect too much of themselves can get tense if things do not work out. Set small practical goals that are achievable and try to stick to them.**
- **Take a break - A change of pace, no matter how short, gives you a new outlook on a new problem.**
- **Exercise regularly - Swim, walk, bicycle, any favourite sport or activity will help you let off steam and work out stress.**
- **Balance your lifestyle - "All work and no play..." Balance work time with leisure time and don't forget relaxation.**





Relaxation

The more anxious you feel, the more tense your muscles are. If you can reduce this tension by relaxation you will feel less anxious. You may still have worries, problems and concerns, but your mind and body will be able to deal with them.

The following is a shorter guide to relaxation that can be done anywhere.

Your two minute guide to relaxation

Legs (15 seconds)

Lying in bed or sitting in a chair, stretch your legs out stiffly and try to point your toes, curling the toes down as hard as you can. If you find this gives you a cramp, then stop and restart using only as much tension as will avoid the cramp. Keep tension going for 5 seconds, and then relax, do so quickly and completely, letting the feet take the position they want. Do not slowly guide them to a relaxed position. For a few seconds, close your eyes lightly and experience the feeling of relaxation in your legs and feet.

Legs (15 seconds)

Stretch out your legs as in previous exercise and this time curl your toes back towards you as hard as you can, hold this for 5 seconds, then relax as before. Relax for a few seconds, with your eyes lightly shut.

Buttocks (15 seconds)

Tense the muscles of your buttocks for 5 seconds, then relax. The idea is to relax the large muscles of the buttocks and the sphincter muscles which control bowel movements.

Arms (15 seconds)

Stretch your arms out in front of you at right angles to your body. Keeping the elbows locked straight, pull your hands and fingers towards you so that your palms are facing away from you. Try to bring the tips of your fingers as far back as they will go for 5 seconds.

Then relax quickly and completely, letting your arms fall so that they lie by your side. If you are sitting in a chair, try not to let your arms rest on the arm of the chair as this will encourage tension in your shoulders. Let your arms and hands lie still for a few seconds while you experience the releases of tension, keeping your eyes lightly shut.



Shoulders (15 seconds)

Pull your shoulders up as though you were trying to get each shoulder to touch your earlobe. Do both shoulders together. Put as much effort into this as possible. Hold for 5 seconds while continuing to breathe. Relax more slowly than for the other exercises, breathing out at the same time (be careful not to relax the muscles of the shoulder abruptly as this can lead to pulled muscles).

Face (15 seconds)

Make sure that your head is balanced centrally on your shoulders to reduce any tension in your neck. Gently screw up your face in a grimace for 5 seconds then relax, unclenching your teeth and keeping your jaws slightly apart. Lightly close your eyes, relaxing the muscles of your eyelids.

Breathing and relaxation (30 seconds)

Many people breathe only with the muscles of the chest. You will find that if you can learn diaphragmatic breathing (using the muscles of the stomach to breathe) relaxation will be much improved. To breathe in, push the stomach muscles out, to make yourself as "fat" as possible. If the airways are kept open you will automatically take a breath in.

To breathe out, simply relax the stomach muscles. Take normal amounts of air in but breathe out more slowly, in a long sigh. Notice that at the end of breathing out there is a "slumped" feeling in your chest and the shoulders encourage this. This is what relaxation feels like.

Deep relaxation (when you have more time)

Having done all the exercises you are now sitting or lying in a relaxed and comfortable place. Imagine that your body is increasing in weight - that is being gently pressed into the seat or bed. Concentrate on each part of the body in contact with the seat/bed, and feel the weight of your body increase. Notice that this is particularly the case at the end of each out breath. Concentrate on nothing else.

The benefits of relaxation

You will find that with practice and over 3 to 5 weeks, you will be able to relax more during times of stress or anxiety. It is important at first to keep practising and concentrating on the exercises listed in this section.

This will help your shoulder muscles, your breathing technique and will provide good relaxation. For the first few weeks you are teaching your body what it feels like to be relaxed; in time your body will rapidly respond when “asked” to relax.



Useful Contact Information

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Aberdeen Royal Infirmary

- (01224) 550515 or 552294
- email: gram.noscts@nhs.scot

Cardiac Rehabilitation Department

Aberdeen Royal Infirmary

- (01224) 553946

NHS 24

- 111
- www.nhs24.scot

British Heart Foundation

- www.bhf.org.uk

Driving and medical fitness

- www.direct.gov.uk/motoring

Smoking Cessation

- 0500 600 332

British Cardiovascular Society

British Association for Cardiac Rehabilitation

- www.bcs.com



The Fabulous Journey to Coronary Artery Bypass Graft and back.

An original poem by John W Hodge 23rd April 2019.

From Ward 216 to 201 I'm going down with wonder as Dr Colin Reid and his anaesthetic team begin to put me under, then Cardiologist Surgeon - Mr El Shafei takes over me and the El Shafei team begin to sort me out, as two feet of vein from my left leg is carefully taken out!

Then soon blocked arteries are bypassed with great skill and ease and as I begin to waken up, my mind is truly pleased, for eyes opening with ventilating tube in full view, is the sign that lets me know that I've truly made it through! with praying mantis hands now and joyous tears that fill my eyes I give grateful thanks to the medical teams and the big man in the skies!

Then teams of caring nurses now take over my recovery (ee) their dedication shining so bright is easy for all to see! and each of them has only one mission, uppermost in mind. That is to help me recover quickly - oh dear lord how kind!

Six days has been my journey from the start unto the end. Today to be discharged from home and continue on the mend. I have been given lifes extension and can make a freash new start. For a new journey now begins with my fully refurbished heart, so on and on I can go and continue on the mend, with a heart to serve me better from now - until life's end

With Truly grateful thanks to all who assisted with my Coronary Artery Bypass Graft journey!



Joe McCann had cardiac surgery in May 2018 and in October 2018. He is now very fit and resuming an entirely normal life.

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