

# Undergoing Cardiac Surgery

Patient information



Community of Care

 **Norwest**  
PRIVATE HOSPITAL  
by Healthscope



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## Introduction

This booklet is to provide information before you undergo open heart surgery at Norwest Private Hospital. Open heart surgery can include any of the following; Heart Valve replacement or repair, Coronary Artery Bypass Grafts, ascending aortic aneurysm repair or cardiac malformations.

Whichever surgery is planned, the information will help you and your family understand the reason you require surgery, what to expect in your subsequent recovery period and rehabilitation.

Norwest Private Hospital has a suite of operating theatres fully equipped for cardiac surgery and a 19 bed Intensive Care Unit and 28 bed Coronary Care Unit for recovery after surgery. During your stay, you will be under the care of your admitting surgeon and the hospital medical team including Specialist Intensive Care Doctors and Intensive Care and Coronary Care Nurses.

It's important for you and your family to understand the procedure and what to expect. Read this booklet and share with family members to prepare for the proposed surgery. If you have any questions, please call our Coronary Care Nurse Unit Manager on 02 8882 8552, or your surgeon.



## Pre-Admission Procedure

Admission to the hospital will be on the day prior to your heart surgery to prepare, both physically and psychologically. You will be provided with relevant education and the normal recovery phase will be explained. The nurse, physiotherapist and the doctor will examine you and record your medical history. Blood tests and a chest X-ray will be attended. If you have relevant X-rays or test results, please bring them with you. You will be given an opportunity to visit the Intensive Care Unit if you wish.

It is advised that your spouse/other family members accompany you so they are also informed of what to expect in the post-operative period.

### Pre-Admission Clinic

If your surgery was planned in advance, you may have already attended the Pre-Admission Clinic where all your tests had been performed. However, you are still required to be admitted the day prior to surgery to prepare you and your family for surgery.

### Physiotherapy

Physiotherapy is a very important part of your hospital stay and helps ensure a rapid and full recovery. Prior to your operation, the physiotherapist will explain and practise with you the exercises you will perform in hospital. You will also be given a breathing test (spirometry) to give a reading of your lung function. Smoking should have ceased by this time.

You will be given information on exercises you will need to perform after surgery.

## Day Prior to Admission

Hospital administrative staff will call the day prior to admission and advise the time to come into the hospital for admission. Fill in the details below.

Admission date: .....

Admission time: .....

Operation date: .....

On arrival to Norwest Private Hospital, present to Main Reception on the ground floor.

## What to Bring to Hospital

- Regular medication in their original boxes  
(No pill boxes, webster packs etc.)
- Pyjamas, night wear, underwear
- For women, a soft bra for support after surgery will prevent pulling on the wound
- Toiletries including sanitary pads if needed
- This booklet

## Preparing for Surgery

- Your surgeon will discuss with you and your family the nature of your heart problem, the type of operation planned to correct it and advise the approximate length of time for the operation.
- The Cardiac/Intensive Care (CCU/ICU) nurse will also explain what you can expect after the operation. Any questions you or your family have, can be answered at this time.
- The day before or morning of surgery, an anaesthetist will visit to explain their role. The anaesthetist will be happy to answer any of your queries.
- The Intensive Care Doctor (Intensivist) will see you before surgery to assess you and answer any further questions.



## Body Preparation

On the day prior to surgery, your body hair will be clipped from your neck to your ankles, including your arms and pubic area. Talcum powder and body sprays should not be used two days prior to surgery. You will be required to shower with a special antibacterial soap on the evening prior to surgery and the morning of surgery. You may wash your hair with normal shampoo and conditioner.

## Diet

On the evening before surgery, you will have dinner. If your surgery is planned for the following morning, after midnight, you will **not be allowed to eat, drink or chew anything** so your stomach will be empty at the time of surgery. "Nil By Mouth" (NBM) sign will be written on your whiteboard to notify all staff.



# What happens during Cardiac Surgery?

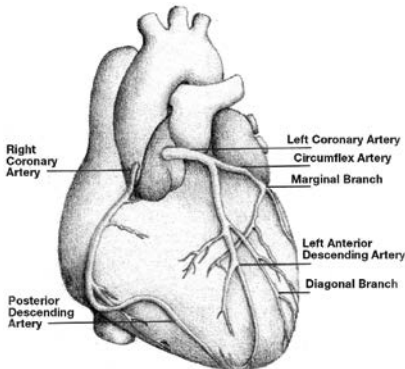
Your surgeon will make a midline incision through the breast bone of your chest and this will expose the heart. The heart is not taken out of the chest for surgery but remains inside its cavity.

You may be connected to a heart-lung bypass machine through a series of tubes which maintain blood flow to the rest of your body. The heart is stopped with a fluid (cardioplegic solution) which allows the delicate surgery to be performed whilst the heart is not beating. The breastbone (sternum) is wired together after the operation is complete.

Your body is cooled to 32 degrees celsius during the operation to protect vital organs and then is rewarmed at the end of the operation. The skin re-warms slowly so you may often feel very cold and look very pale while in the Intensive Care Unit.

# What are Coronary Arteries?

There are three major coronary arteries; one on the right side and two on the left side of the heart. Each artery has many branches which are as variable as the branches on a tree. Some are large, some are small and every person has a slightly different pattern.



## Common Abbreviations

### RCA

Right Coronary Artery

### Main LCA

Main Left Coronary Artery

### LAD

Left Anterior Descending Artery

### Circ

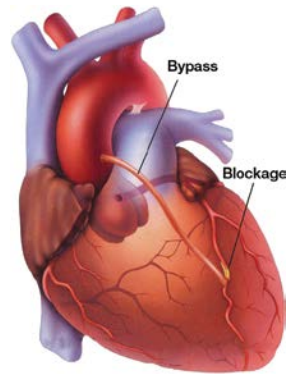
Circumflex Artery



# What is Coronary Artery Bypass Graft Surgery?

Coronary Artery Bypass Graft Surgery (CABGS) is a surgical procedure in which veins or arteries, usually removed from the leg are used to bypass obstructions in the coronary arteries. An artery may also be used from the arm (radial artery) or taken from inside the chest (mammmary artery).

These grafts are used on the surface of the heart to bypass obstructions in the coronary arteries. Blood flows past the obstruction and through to the heart muscle, restoring blood and oxygen to areas where it was once reduced by the obstruction (arteriosclerosis).



Above: CABG restores normal blood flow to an obstructed coronary artery.

# What is Valvular Heart Disease?

Within the heart there are four one way valves that keep blood flowing in the right direction through the heart and then to either the lungs or to the body.

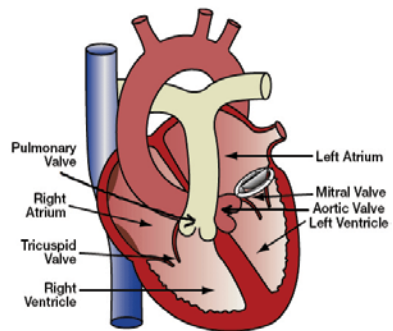
Heart valves can become loose and floppy or tight and narrowed. Sometimes, there may have been a defect in the valves since birth. Valvular heart disease can cause symptoms such as angina (chest pain), shortness of breath, dizziness and fatigue.

**Tricuspid valve:** Right side of the heart between the right atrium and right ventricle.

**Pulmonary valve:** Right side of the heart between the right ventricle and the artery that takes blood to the lungs (pulmonary artery).

**Mitral valve:** Left side of the heart between the left atrium and left ventricle.

**Aortic valve:** Left side of the heart between the left ventricle and the artery that takes blood away from the heart towards the body, known as the aorta.



# What happens in Valve Surgery?

Valve surgery involves replacing or repairing one or more of your valves in an operation that takes between 2-4 hours. Your surgeon will make a midline incision through the breast bone of your chest and this will expose the heart. The heart is not taken out of the chest for surgery but remains inside its cavity.

## Prosthetic Valves

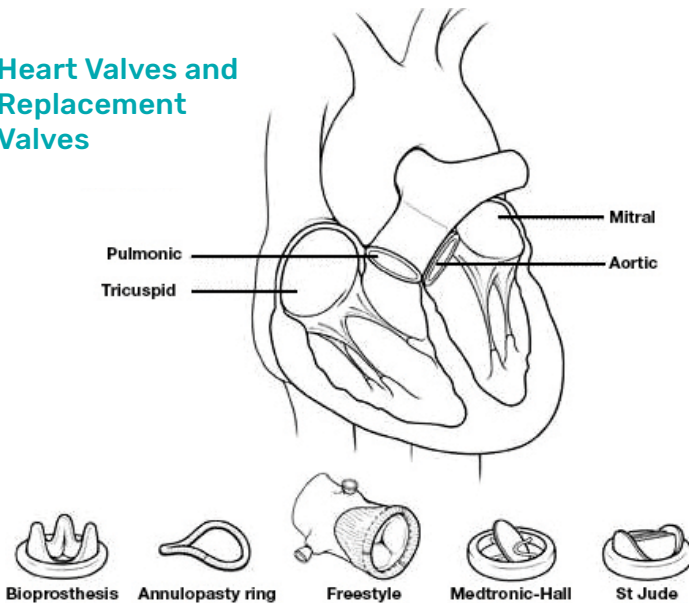
If a heart valve cannot be repaired, it may be removed and replaced with a prosthetic valve. The two types of prosthetic valves are:

**Mechanical Valve** made of metal or a similar substance.

**Tissue Valve** is taken from the heart of an animal, usually a pig. The valve is processed in such a way there can be no possibility of rejection by the human body. A human heart valve is also a tissue valve.

If a Mechanical Valve is used, you will need to take blood thinning medication for the rest of your life.

## Heart Valves and Replacement Valves



## IMPORTANT INFORMATION IF YOU ARE HAVING VALVE SURGERY

### Prevention of infection in the heart valve

Prevention of infection is important after heart valve surgery. Bacteria which may cause infection and seriously damage the valves or other structures of the heart can enter the bloodstream in several ways.

- Organisms normally found in the mouth may get into the bloodstream through the gums if there is a broken area resulting from brushing or recent dental work.
- Diagnostic or surgical procedures can damage the tissue lining in other parts of the body and thereby allow organisms to break through the body natural defence barrier.
- Bacteria in “boils” or other local infections such as urinary tract infections can also cause problems.

Dentists and other doctors need to be aware of the prosthetic valve before they prescribe any other medications, or before any surgical procedures.

**If you have an artificial heart valve, you will always require antibiotic treatment prior to dental work or operation.**

# After valve surgery

## Medic Alert

It is recommended that you wear a Medic Alert emblem to notify people of your medical condition. In the case of an emergency situation where you may be unable to speak, medical services need to be notified that you have an artificial heart valve or have had your heart valve repaired, and you may be taking blood thinning medication. This information is vital and will help ensure you receive the appropriate treatment.

There are several brands of jewellery available with the emergency emblem. Your medical information can be engraved on the back of the jewellery.

### **For further Medic Alert Information:**

[www.australia.universalmedicalid.com](http://www.australia.universalmedicalid.com)

[www.mediband.com](http://www.mediband.com)

[www.id4u.com.au](http://www.id4u.com.au)

## Medications

Anticoagulant medications “blood thinners” help to prevent blood clots forming, e.g. Warfarin. If you have to take an anticoagulant you will receive an information booklet and education from the Hospital Pharmacist and or Nursing Staff before discharge.

## Important points to remember after valve surgery

- To protect from infection, routine check-ups with your dentist and GP are recommended.
- Wait at least six weeks after surgery before having any dental, diagnostic or surgical procedure.
- Inform each doctor caring for you that you have had a heart operation so he/she can prescribe antibiotics for you to take before or after any procedure, if necessary.
- Report occurrences of fever, chills, weight loss or loss of appetite to your Doctor and make an appointment to see him/her if you develop a cold, sore throat, influenza or local infection.
- You may retain water even after successful valve surgery and may put on weight even though you are not over eating. A salt free diet is often recommended after valve surgery to minimise the body's retention of fluid.
- Inform your doctor of any dramatic unexplained weight gain, rise in temperature, pain and any other symptoms.
- Brush your teeth and gums with a soft bristled brush twice a day.



# Day of surgery

## Visiting Hours are: 10.00am - 12.30pm and 2.30pm - 8.00pm

Some families may wish to be with you prior to surgery, and wait whilst you are in surgery and see you afterwards. Others may be more comfortable waiting at home for the doctor to call post operatively. We respect the individual wishes of family and ask only that you inform us of your plans, and ensure the next of kin's phone number is correct. Alternatively, your family may choose to wait in the Intensive Care patient's lounge. Nurses will show your family the location of the lounge.

## Phone Enquiries

It is possible to speak directly to the nurse caring for the patient at any time in the immediate post-operative period by calling 8882 8502 (ICU). We do however request, that one family member is nominated to call and relay the information to other family members.

## Morning of Operation

You should take a shower with the antibacterial soap and put on hospital gown provided, which ties at the back. Do not wear pyjamas, pyjama bottoms or underwear. Male patients can shave. You may brush your teeth and rinse your mouth with mouth wash or water, provided you do not swallow.

Check to make certain you have removed all jewellery (including your wedding ring), cosmetics, nail polish, hairpins, hair pieces, and underwear. You should have an identification band on your wrist and it will be red if you have any allergies. If you do not have an identification band, please notify your nursing team.

You may wear glasses, dentures and hearing aids until you go to surgery. Contact lenses should be removed and with all other items, will be sent to ICU, for when you come out of surgery.



## Pre-medication

About 20 minutes before you are taken to the operating room, you will receive an injection or tablet, and an oxygen mask will be applied at this time. This may make you sleepy and dry in the mouth and you will have to stay in bed after you receive this. It is advisable to go to the toilet and empty your bladder before the medication.

## Transfer to Surgery

A nurse will accompany you to theatre by your nurse, about 60 minutes before the scheduled time of your operation.

## Anaesthetic

Your anaesthetist will see you shortly after your arrival in the operating theatre and will then gain intravenous access (i.e. inserting cannulas) for administration of medications and infusion of fluids. The anaesthetist will be responsible for your sedation and monitoring throughout the procedure.

## Immediately After Operation

On completion of surgery, you will be transferred to the Intensive Care Unit (ICU) to receive specialist nursing care.

We understand that your family members will be anxious to see you on admission to ICU, however, it will take up to an hour for ICU staff to settle you into your room. During this time you will be connected to cardiac monitoring, a ventilator, and have a chest X-ray, ECG and blood tests. You will be asleep during this time.

It is important that family members are aware that it may be confronting when they first see you. Infusion pumps, monitoring equipment, breathing tube connected to the ventilator, and chest drains are standard practise with your procedure. As you will still be sedated/asleep, you will be unable to communicate with your family member, however, we do encourage them to hold your hand and speak to you. You may experience disorientation due to the administration of medication, recovery from anaesthetic and being in unfamiliar surroundings. This is quite normal, but your family may discuss this with your Nurse or Doctor if concerned.

## Breathing Tube

An endotracheal (breathing) tube will be inserted through your mouth and connected to a ventilator. Administration of sedation will help to ease any discomfort experienced from the breathing tube. The ventilator is intended to assist recovery and the machine can breathe for you completely or assist your breathing in providing support as required. You will be unable to talk while the breathing tube is in.

We will aim to remove the breathing tube as soon as possible. Generally it will be removed the morning after your procedure. Sedation will be decreased in preparation for the removal of the breathing tube which means you will become more aware of the breathing tube and your surroundings. Assistance will be provided during this process. It will not be possible to talk but we will assist you in other means of communication.

Please remember that whilst the breathing tube is in place, you will never be left alone. Once you have had a chest X-ray and the Intensive Care Specialist is satisfied that you can breathe effectively on your own, the breathing tube will be removed. After the breathing tube is removed, oxygen will be provided via a mask or nasal prongs.

Great emphasis is placed on continuing your breathing exercises post removal of the breathing tube (see information about physiotherapy on page 3).

## Other Tubes/Lines

- Central Venous Catheter - this is a long line (inserted by your Anaesthetist) into your neck for administering medications and fluids. It allows administration of medications at a faster rate and higher concentrations than through a peripheral cannula. It may cause some discomfort but you will be made as comfortable as possible.
- Chest drains - two or three drains will be inserted just under your sternum to assist with draining blood from the surgical site. Once we are satisfied that drainage has eased (usually day one post-surgery) the chest drains will be removed.
- Indwelling catheter (IDC) will be inserted in theatre to help monitor urine output and fluid balance. IDC will help pass urine so there is no need for you to go to the toilet.

## Monitoring Heart and Blood Pressure

Small electrodes, placed on your chest allow continual monitoring of heart rate and rhythm. Occasionally, pacing wires may be inserted during the operation. When connected to an external pacing device, these wires increase your heart rate until your own intrinsic rate is satisfactory. Pacing wires are located externally, just below your heart and are generally removed on day five after the operation.

Blood pressure is continually monitored via an invasive line, usually inserted into the right wrist. This is called an arterial line which also allows collection of blood without the need for a needle each time. The arterial line will be removed on either day 2 or 3 post-surgery.

## Pain Relief

Being pain free is very important post-operatively. If you have pain, then it will hurt to breathe and therefore you will only take small shallow breaths. If you continue to take shallow breaths, fluid can build up in the lungs, making you short of breath. This is why deep breathing and coughing exercises are so important.

Immediately after the operation, pain relief medication will be running continuously through your intravenous cannula. Intravenous pain relief will be slowly turned down as oral medication (e.g. oxycodone, paracetamol) is started. If the tablets do not provide adequate pain relief, inform the nursing staff. Everyone experiences pain differently, and some people need more pain relief than others.

## Weight Gain

After the operation, your weight will increase by between 5-15kg of fluid weight. This is normal and will be managed in a number of ways. Restrict intake of fluid to no more than 1200mL to 2000mL (depending on your surgeon).

## Diet after Surgery

You will be given your first meal four hours after the breathing tube has been removed. The meal will be clear fluids initially. A normal diet can be resumed as your appetite returns and you feel more comfortable with eating.

## Wound care

Sternal (chest) and leg wounds (if applicable) are dressed if needed, otherwise individual surgeon's preferences are followed. Some surgeons prefer dressings to all wounds and some prefer to leave the wounds open to dry and heal.

**Note:** Flowers are not permitted in ICU, so please advise family and friends before admission not to send flowers whilst in Intensive Care.

## Transfer to Coronary Care Unit

After discussion with your surgeon and when the Intensive Care Unit team is satisfied with progress, you will be transferred to the Coronary Care Unit (CCU), usually 2-4 days after the operation.

## Mobilisation & Activity

You will remain in bed on the day of surgery but you can look forward to a fairly accelerated mobilisation plan. The plan helps you understand what is expected of you on a daily basis but remember, we will work with you individually. You may progress faster or slower than the plan.

### Walking

Walking will increase the circulation of blood and oxygen, reduces muscle tension and bone discomfort. Movement reduces stiffness, soreness and does not make it worse.

## Post Cardiac Surgery Mobilisation

### Day 1:

- Sponge in bed
- Sit out in a chair for a short period

### Day 2:

- Sponge or shower with assistance
- Sit out of bed for meals
- Rest as often as required
- Walk into corridor with physiotherapist or Nurse

### Day 3:

- Shower with assistance
- Walk 2-3 times during the day as guided by the physiotherapist
- Rest as required
- Transfer to Coronary Care Unit.

**Day 4:**

- Shower (with assistance if required)
- Walk in corridor 3-4 times during the day as guided by the physiotherapist
- Rest sitting in the chair
- Rest in bed less frequently

**Day 5:**

- Shower unassisted
- Continue to walk several times during the day.
- Rest in chair
- Talk about cardiac rehabilitation and discharge expectations

**Day 6:**

- Shower unassisted
- Continue to walk increasing time and distance
- Climb stairs, receive home exercise booklet from physiotherapist
- Nutrition & dietician

**Day 7:**

- Walk to lift area
- Continue walking program

**Day 8:**

- Going Home
- Instructions on what to do when you go home including cardiac rehabilitation
- Medication instructions (see further discharge information about medication on page 25)
- Flu vaccination appointments will be advised or arranged.



## Normal Post-Operative Occurrences

After cardiac surgery, it is normal to experience some incision, muscle and bone discomfort. Several things can help ease the tightness in the chest and shoulders such as good posture when sitting, standing and walking frequently in the hall. Exercise arms and shoulders when awoken in the morning and after a nap. Pain medication is available and will be given by a nurse regularly. If you still have pain, let the nurse know as you may require more pain relief.

Slight puffiness or swelling around the incision may be seen, especially at the upper end of the chest incision and, for those who have a leg incision, swelling at the lower end. The swelling will decrease gradually and disappear completely in three or four weeks.

Knee length stockings will be worn to help decrease swelling and improve circulation in the legs. To further decrease swelling, prop up your feet when you sit and avoid crossing your legs.

Occasionally, a very small amount of drainage is seen at incision sites. Some surgeons prefer to keep wounds covered with a gel dressing until the discharge ceases. When you go home, you will be given instructions if any specific routine is to be followed. Usually when discharged, the wounds have no dressings and do not require re-dressing.

As the incision heals, drying of the skin and itching may be noticed in incision areas which is normal. If incisions were closed with external skin stitches, a nurse will remove them approximately seven days after surgery, depending on your surgeon's preference. If incisions were closed with subcuticular or "under the skin" stitches (the chest wound), you will not need to have them removed. The small stitch visible at either end of the incision will absorb within several weeks and will fall off.

It is not uncommon to have a fever for five to six days after surgery until your lungs are cleared of mucus. You may perspire during the day and particularly at night. This may continue for several weeks after discharge from hospital.

## Your Feelings

Time spent in hospital for illness or an operation can be disruptive to your lifestyle and relationships. Because of the extra pressure that you may be under, you may find yourself feeling quite emotional about big and small events.

Although, people differ greatly in their response to illness and operation, changes in emotional, behaviour and mood after surgery are common. Many people talk of sudden feelings of sadness - wanting to cry whilst watching TV or movies; feeling agitated, irritated or cranky; sudden changes in mood and general fear or anxiety (a dark cloud hanging over them). These are quite normal reactions and for most people this settles over time as they recover from their operation.

Feelings of depression may also occur. Talking over your feelings with someone you trust (relative, friend or professional) can help to lessen the intensity of depressed feelings. Often, by setting small goals for yourself, you can get going again. An operation such as heart surgery is a crisis in anyone's life and it often takes time to regain confidence.

During recovery, you may find well-meaning relatives or friends giving overly restrictive advice and suggestions on how to "get well". Try to avoid conflict over such advice, work out your needs and discuss these with your doctor.

After any operation, it takes time for the body to heal. Your main "work" is to help the healing take place. This takes time and may mean seeking support and letting your mind and body relax.

If you feel confused or anxious about a problem, talk it over with your doctor, nurse or other trained staff.

## Rest & Sleep

Rest and sleep are important in recovery from any major surgery and in particular following a stay in an Intensive Care Unit (where the light always shines and there is not much difference in day and night). You will be very tired after the operation but this will improve as the weeks go by. It can take at least three months for the fatigue to completely subside. Some people, particularly the elderly can take up to a year to fully recover.

It is advisable to let your friends and relatives know that rest is important during recovery and that visitors and phone calls need to be kept to a minimum.

## Going Home – information about discharge

Average length of stay in hospital is seven to ten days. Before discharge, the following will be discussed with you:

- Discharge instructions
- Medications
- Follow up appointments
- Dietary advice (the dietician will see you while you are in hospital)
- Rehabilitation guidelines

It is a good idea to write down any questions before your discharge day. A chart to write your questions will be provided.

Once discharged, most people return home and their spouse/family assist with their recovery. This may not always be possible or practical due to distance or inability by family members to assist. If you require assistance after discharge, there are options available such as transfer to a specialist Rehabilitation Hospital or a few extra days in hospital. Also, community help i.e. Meals on Wheels etc. can be arranged. Let the nursing team know if assistance is required.

## Driving after surgery

Driving a car is not permitted for six weeks after the operation. At the follow-up appointment with your surgeon (usually at six weeks), your chest will be examined and then advised if you can resume driving.

For every 1½ hours of driving, stop and walk around for a few minutes to increase your circulation. A seat belt should be worn and a pillow may be placed between the belt and your chest for comfort.

## Wound care after surgery

Shower as normal, however do not rub soap directly onto the wound. Any kind of soap may be used, however it is best not to use highly perfumed or very oily soaps since they tend to irritate healing tissue.

Until the incisions are healed completely and the scabs have fallen, do not apply ointment, lotion or powder directly to the incisions. However, lotion applied to the skin around the incision, may decrease the drying of the skin and itching which normally occurs during healing. No problems are expected with the incision after you go home but if you notice increased incisional redness, swelling, tenderness, drainage and/or experience fever or chills, contact your General Practitioner or surgeon. Avoid sunburn to the area for two months after surgery.

Expect to experience occasional incisional discomfort for several weeks after returning home. Since the discomfort originates in muscle and bone rather than in the heart itself, sneezing, coughing, sudden changes in body position and prolonged periods of inactivity will exaggerate the discomfort. Until the healing process is complete, do not be surprised if the location and severity of your discomfort changes from day to day. “Popping” noises in the area of your chest may be heard until the sternum or breast bone heals.

With leg incisions, you may notice that the skin on either side of the incision may be slightly numb and that some portions of the incisions are healing more slowly or are more uncomfortable than others, this is **NORMAL**. In time, the incision will heal completely and tightness, swelling and numbness will disappear. Backache, particularly through the shoulders is very common for a few weeks.

## Elastic Stockings

Not all surgeons require their patient's to wear TED stockings. If you are required to wear stockings, they must be worn day and night, for six weeks after your operation. If swelling of your legs persists after this time, continue to wear the stockings for another week or two until the fullness subsides. Stockings need to be put back on after bathing, before standing and walking around in the morning.

It is advisable to have two pairs of stockings so they can be washed on a daily basis. Regular washing keeps the stockings firm and elastic. Wash stockings in soapy, lukewarm water and air dry.

To promote increased circulation and help decrease swelling, elevate legs when sitting and avoid crossing legs. When legs are elevated, make sure knees are slightly bent and a pillow behind the calf is helpful. Regular movement of the feet promotes circulation.



## Applying Stockings

The nurse will show you an easy way of applying your stockings. A family member needs to put your stockings on for you, as this is too much exertion on the chest wound. Stockings are not put on like ordinary hosiery. If the stockings are gathered together in the typical “donut” fashion, the effect of the elastic material is multiplied many times and makes application difficult. By following these basic steps, TED stockings are easily applied.

1. Insert hand into Stocking as far as the heel pocket.



2. Grasp the centre of the heel pocket and turn Stocking inside out to heel area.



3. Position the Stocking over the foot and heel, taking care to centre the heel in the heel pocket.



4. Pull Stocking up and around the ankle and calf, working up the final position. For Knee Length, top of Stocking should be 2-5cm below bottom of knee cap. For Thigh Length, the stitch change (change in fabric sheerness) should fall between 2-5cm below the bend of the knee, and top band rests on the line at the bottom of the buttocks. Smooth out any creases, as they can constrict the leg.



**CAUTION: DO NOT UNDER ANY CIRCUMSTANCES, TURN DOWN TOP OF STOCKINGS.**



## Medication

### It is important to NOT take “home remedies”

The pharmacist or nurse will discuss medications in full with you before you leave the hospital. These may differ slightly from the medications you were taking prior to surgery. After you return home, you should not take any medications prescribed prior to your heart surgery unless you are instructed to do so by your doctor.

When you are discharged a “Medication Profile” will be given to you. This is a list of your medications, what they are for, when to take them and possible side effects. Make sure you know which medications have to be taken and what each tablet is for.

With adequate daily exercise, there is unlikely to be need for pain relief stronger than medicines like Panadol or Panadeine. Excessive pain medication can depress the functioning of the lungs and heart and cause complications, including constipation.

## Eating at home

During the post-operative period, good nutrition is important in helping wound healing and speed recovery. The dietician will have seen you before discharge and advised on your dietary needs.

## Activity at home

After heart surgery, you are likely to feel healthier than in the months or years before surgery. By increasing the level of activity each day, you will gradually become stronger and soon be able to do those things which are important to you. Your body will need lots of rest and sleep, this is normal. It is best to discourage visitors at home for the first week while you adjust.

The following information is a guide for activities at home. The best rule to follow in determining the nature and extent of daily activities is how you feel. Your doctor and the Rehabilitation Co-ordinator will provide advice on the best time to resume specific activities.

### **Once at home:**

- Bathe or shower daily and wash your hair any time after discharge
- Walk outdoors at an unhurried place
- Go on light walks around the house, ride in a car, visit friends
- Go to a restaurant, store, theatre, church or any other place you might enjoy
- Walk leisurely up and down stairs, provided it does not cause undue fatigue
- Swim after six weeks, once your wounds are healed.

### **But you should not:**

- Take hot spas and saunas.

Since it takes approximately six weeks for the breast bone to heal, **DO NOT** lift, push or pull anything heavier than 1-2 kg (this includes children). It is a good idea to have someone present, as needed, to perform heavy tasks.

Return to light work approximately six to eight weeks after discharge. If you perform manual labour for work, it may not be possible to return to work for three months. It is difficult to predict the rate of recovery after discharge, so check with your General Practitioner (GP) about when you can return to work. When returning to work or study, try to start on a part-time basis until you feel ready to resume full-time work.

Plan your day so that you alternate periods of activity with inactivity. If you notice that your neck, shoulders and chest muscles are tight, do light exercise to relax your muscles.

- Slowly raise your arms above your head as far as you can reach and lower them to your side.
- Circulating your shoulders and relax them, do not be afraid to move.
- Use good posture when you sit or stand. Stand upright with your shoulders back and don't hunch over.
- Breathe deeply and cough several times during the day to expand the air sacs in the lungs and clear them of mucus.

To avoid placing an added burden on your heart, limit physical exercise and psychological stress.

- Avoid sudden strenuous or sustained exercise.
- Refrain from prolonged periods of activity in very hot or cold temperatures.
- Do not eat or drink excessive amounts or exercise after meals.
- Avoid undue straining when having a bowel movement, rather increase the fibre content in your diet or ask your doctor to prescribe a stool softener or laxative. This is of particular importance if taking codeine for pain relief.
- Refrain completely from smoking cigarettes, pipes or cigars. Smoking not only stresses the heart but places you at high risk for heart and vascular disease.
- Finally, try to avoid situations at home or at work in which you feel especially tense, angry or fatigued and avoid over excitement.

Try to make all activities intermittent and take regular rest periods. Progress is made by gradually increasing the length of time for an activity as well as the level of energy used.

All patients' progress at different rates because of many factors such as age, sex, previous fitness, time spent on bed rest, occurrence of complications, attitudes and opportunities.

In general, activity may be increased progressively as long as shortness of breath, excessive fatigue, unusual tiredness or palpitations does not occur. Programmed activities should not affect you adversely, but it is normal to feel some lack of energy after hospitalisation and surgery. This will resolve as activities are increased. Should you experience palpitations or excessive breathlessness you ought to contact your doctor at the earliest convenience.

Should any angina recur or chest pain unrelated to the surgery that is not relieved by rest, go to the nearest hospital.

## Sexual Activity

Activities are graded according to energy expenditure. Sexual intercourse may be resumed at the same level of energy as other regular daily activities which do not cause breathlessness or fatigue.

With patience and caring, most people regain their confidence for taking part in everyday activities and resume a satisfying sexual relationship with their partner. For the first six weeks after discharge, it is recommended that you refrain from assuming the upper prone position. Energy expenditure is usually less for the lower, or side to side position.

Discussing sexual activity concerns can be difficult for many people. You may find your partner also has questions and concerns about resumption of sexual activity.

Fear associated with sexual activity after heart surgery is one of the most common causes of sexual relationship problems. Communication is very important in resolving any difficulties.

Women should check with a doctor about the adequacy of previously used birth control methods and advisability of pregnancy. Women may notice some delay in the resumption of menstrual periods due to the stress or the surgery. This is normal.

## After discharge – things to be aware

Complications are not expected after discharge. However, consult your doctor or hospital if any of the following occurs:

- Chest pain which is not related to the incision
- Irregular heartbeat, unless this was present on discharge
- Heart rate less than 60 or more than 120 beats per minute (very slow or fast)
- Persistent temperature over 38°C or 100°F
- Rapid weight change; over 2 kilograms (4 pounds).
- Dizziness or fainting
- Excessive tiredness or weakness
- Marked shortness of breath
- Nausea or vomiting without apparent cause.

If you have any problems or further questions at home, do not hesitate to telephone **02 8882 8552 Norwest Private Hospital Coronary Care Unit** and ask for the Cardiac Rehabilitation Co-ordinator or Nursing Unit Manager. Alternatively, contact your General Practitioner who in turn can contact your cardiologist or surgeon if required.

# Cardiac Rehabilitation

A Cardiac Rehabilitation Program after surgery will be of great benefit. Cardiac rehabilitation at Norwest Private Hospital is a continuous process which starts in acute management in hospital, before and following surgery. The progression is based on the principles and guidelines set by the National Heart Foundation.

## **The ultimate goals of Cardiac Rehabilitation are to:**

- Enable you to resume an active and productive life
- Encourage adoption of a healthy lifestyle that minimises cardiac risk. Not only for you, but other family members
- Assist in reaching a level of physical activity which is comfortable with the functional capacity of your heart and then to maintain
- Alleviate depression and restore confidence
- Enable return to previous work and recreation activities
- Maintain an optimal state of health
- Prolong life and prevent recurrences of adverse cardiovascular events.

## **In patient phase (in hospital)**

A structured mobility plan gradually increases activity in preparation for discharge. This is accompanied by education and practical advice. Most people see Cardiac Rehabilitation as being closely related to treatment and not particularly involved with prevention. However, prevention is an integral part of Cardiac Rehabilitation following surgery.

## **Outpatient Cardiac Rehabilitation Program**

Prior to discharge from Norwest Private Hospital you will be referred to our affiliated hospital, The Hills Private Hospital for ongoing Cardiac Rehabilitation, starting about six weeks after surgery and after follow-up with your cardiothoracic surgeon.

Further information about the rehabilitation program at The Hills Private Hospital is available at [www.hillsprivatehospital.com.au](http://www.hillsprivatehospital.com.au) or call The Rehabilitation Co-ordinator on **02 9686 0454** one week after discharge.



# Looking After Your Coronary Arteries

Before starting a rehabilitation program, note here the goals that you would like to achieve:

Risk factors associated with coronary artery disease		
Those That Can Be Modified	Current	Goal
High Blood Pressure		
High Blood Fats • Cholesterol • Triglycerides		
Cigarette Smoking		
Lack Of Physical Activity		
Overweight		
Those That Can't Be Modified	Current	Goal
Family History		
Diabetes		
Sex		
Age		
Specific modifications		

## Activity & Exercise Program

When you go home the physiotherapist will give you an Activity and Exercise program to follow:

- a) Six-Week Activity plan
- b) Home Walking plan

### Here's what you can expect:

#### Week 1

- Activity level as in hospital - light activities
- Rise late, shower and dress
- Stroll around the house and garden
- Sedentary interests; reading, music, TV
- Stairs; go slowly and rest midway
- Limit visitors
- Mid-morning and mid-afternoon rest
- Avoid stooping and bending
- Walking as per physiotherapy home program
  
- Own goals: .....

#### Week 2:

- Progress walking as per physiotherapy home exercise program
- Increase use of stairs if necessary
- Light activities in the house, e.g. setting table, wiping dishes, dusting
- Light activities in the garden e.g. watering, tending to indoor plants
- Outings: be driven to & from (maximum 2 hours)
- Rest
  
- Own goals: .....

### **Week 3:**

- Continue to increase activities
- Continue to progress as per physiotherapy home exercise program
- Short outings
- Light activities in house: wash dishes, pulling up bed clothes
- Light activities in the garden e.g., light cutting, light weeding (seated)
- Own goals: .....

### **Week 4**

- Continue with walking program as per physiotherapy exercise program
- Outing (quiet) local restaurant, theatre (maximum 3 hours)
- Household activities: make beds, cooking light meals
- Own goals: .....

### **Week 5**

- Continue with walking program
- Household activities - light shopping, mop floors, and vacuum in stages with rest breaks
- Outings: longer time, more people
- Own goals: .....

### **Week 6: Check Up With Cardiac Surgeon and Cardiologist**

- Continue with walking program
- All household activities as normal, unless very heavy
- Drive car locally in non-peak hour traffic
- Discuss with doctor returning to light work activities, limiting work hours initially
- Own goals: .....

### **Week 7: Begin Cardiac Rehabilitation Program**

- Continue walks regularly
- Drive car for longer periods
- Own goals: .....

### **Week 8**

- Continue walks regularly
- Own goals: .....

### **Week 9 & 10**

- Upgrade activities

### **Third month**

Return to normal work after discussing with your doctor. Advice regarding sports and strenuous exercise may be necessary.



## Exercising at Home

Following surgery, it is important to gradually build up fitness which will keep the heart healthy and improve sense of well-being. Walking each day is a good way to exercise initially. Before discharge from hospital you will be given a home exercise program specifically prescribed for you by the physiotherapist. This program covers the first six weeks at home, gradually progressing walking each week.

When you commence the walking program, it is important to do a warm up exercise prior to beginning each session. This will prepare your heart and muscles for more intense work and prevent injury.

- After completing the six-week walking program, continue to walk for 30-40 minutes, 4-5 times a week. (Please refer to the “Going Home after Cardiac Surgery” booklet which will be given to you by the physiotherapist.)
- If you are unable to tolerate walking continuously for 30-40 minutes, try to walk for this period of time in several shorter intervals (i.e. 2 x 15 minutes or 3 x 10 minutes).
- It is not necessary to exercise hard, in fact jogging or squash could be harmful. Moderate intensity exercise is all that is required e.g. walking.
- Walking should be continuous; it will not benefit your heart as much if you are stopping and starting.
- To monitor the intensity of exercise, examine your breathing. While exercising you should be able to comfortably talk to someone at the same time. If you are breathing hard and finding it difficult to talk, slow down a little.
- If during exercise you have any distress, undue shortness of breath, chest pain, and nausea associated with sweating or marked fatigue, slow down or stop until these symptoms subside. If they persist, contact your doctor or seek medical assistance immediately.
- After your six week check up with your cardiologist, you may be allowed to commence other forms of exercise such as cycling or swimming.

## When can these activities commence?

<b>Swimming</b>	Commence after six weeks. It is best to start with freestyle as breast stroke puts more pressure on the breastbone
<b>Lawn bowls</b>	Six weeks
<b>Golf</b>	Three months (putting only after 8 weeks)
<b>Tennis &amp; squash</b>	Three months (check with the doctor first)
<b>Training with hand weights</b>	Two months
<b>Walking a dog on leash</b>	Two months (as you may get a sudden pull on your chest)
<b>Sexual activities</b>	Four weeks or earlier depending on chest discomfort

The good news is there is **no minimum** level of exercise to gain benefits. It was previously believed that exercise for a certain period at a certain pulse rate was necessary, however now it's been shown that it's the total energy used over a week that counts.

Exercise for as long or as short as you wish but the more you exercise, the better. If the exercise is moderate, try to be active most days. If it is harder, try every second day to give muscles and joints a rest.

## Frequently Asked Questions

It is normal to be concerned about having heart surgery and there will be many questions. Some frequently asked questions are answered here and the medical or nursing staff are available to answer any other questions. Recovery from surgery is easier and quicker if you are not anxious or concerned about what will happen.

### **Q: Is There Risk In This Operation?**

A: For routine cases today, the general risk of complications is only 1% to 2%. Your surgeon will discuss the risks with you and if any special risks exist in your case. If you wish to know about your particular risk, please talk to your doctor.

### **Q: What Can I Do To Help Prepare For Surgery?**

A: Coughing and deep breathing exercises and maintaining mobility are two important things you can do to help yourself recover quickly.

The physiotherapist will teach you to do these exercises before your operation and afterwards they will help you to do them regularly. Try and practise these exercises four times a day before surgery, so you will then be able to do the exercises more easily after the operation (when it is more difficult because of discomfort from your incision). It is important to try your hardest to use any special devices to help breathing and to become familiar with these devices.

### **Q: How Long Will I Be In The Operating Room?**

A: The average time is four hours, but this varies with the type of surgery you are having and your surgeon. You'll not be aware of time during this period.

### **Q: Can I Move Post-operatively With All The Tubes In Place?**

A: Yes, but restricted to small side to side movements in the bed and nurses will help you find the most comfortable position. The nurses and physiotherapist will help you to sit in a chair with the tubes in, if the Doctor agrees for you to get out of bed.

**Q: Will I Have Much Pain?**

A: During the first 24 hours, you are under heavy sedation and unlikely to remember this period. Most patients feel soreness, discomfort and tenderness rather than pain. Some patients also complain of backache or pain between the shoulder blades, this is normal. Nursing staff will give you medication to keep you comfortable. Do not be frightened to tell the Nurses and Doctors of your discomfort as everyone experiences pain differently, and you may require more pain relief.

**Q: Is It True That I May Be Confused After Surgery?**

A: Almost all patients lose track of time after the operation and during their stay in the Intensive/Coronary Care Unit. You may find the hours and days seem longer when the nursing staff are regularly checking on you. The lights of the unit need to be on day and night, which can add to the difficulty in judging time. Nursing staff will try to keep you aware of the days and time.

It is not unusual to experience periods of forgetfulness and depression during recovery.

Sleeplessness is also common but it is important to relax, rest and sleep during recovery. If medication is needed to help sleep during this time, you will not become dependent on these medications later.

Some patients have unusual dreams or disturbing thoughts whilst lying in the Intensive/Coronary Care Unit. It may help to reduce the after effects of these dreams or thoughts by talking with one of the Nurses or Doctors.



**Q: Will I Have Trouble Breathing?**

A: Mucous tends to collect in the lungs more after heart operations than normal. In the Intensive/Coronary Care Unit, the nursing staff may use suction catheters through the breathing tube which may make you cough. Although uncomfortable, this is necessary to avoid build-up of mucous in the lungs.

After the breathing tube is removed, you can help bring up mucous by coughing voluntarily even though it may hurt. Try not to worry about the stitches as they will not break. It will be uncomfortable to cough and deep breathe, and if there is pain you are encouraged to ask for pain relief. Pain relief medications will be offered and given to help with coughing and breathing exercises. Remember again that coughing and breathing exercises are one of the most important things to do to aid recovery.

**Q: What Happens If I Keep Smoking?**

A: Smoking produces mucous in the lungs and this is markedly increased by a long operation. Smokers therefore find it more difficult to cough and breathe deeply after surgery and have a higher chance of developing pneumonia or collapse of the lung. It is important to stop smoking at least six weeks before surgery and to continue to abstain after surgery. It will help recovery if you stop smoking and continued smoking is associated with a high failure rate after bypass surgery and a greater likelihood of heart attack and further heart problems.

**Any other questions?**

If you have other questions, write them down when you think of them and ask the doctors or nurses when you see them. It is much better to ask questions than to feel worried or uninformed.

**Additional questions**

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## Contact Us

**Norwest Private Hospital (Main Reception)** - Phone: 02 8882 8882

**Coronary Care Unit** - Phone: 02 8882 8552

**Intensive Care Unit** - Phone: 02 8882 8503

[www.norwestprivatehospital.com.au](http://www.norwestprivatehospital.com.au)

## Helpful Websites & Other Phone Numbers

### Medicine Information

[www.nps.org.au](http://www.nps.org.au) - 1300 Medicine (1300 633 424) 9am-5pm

### Heart Foundation

[www.heartfoundation.org.au](http://www.heartfoundation.org.au) - 1300 362 728

### Heart Online

[www.heartonline.org.au](http://www.heartonline.org.au)

### Quit, for smoking cessation

[www.quit.org.au](http://www.quit.org.au) - 13 78 48 (13 QUIT)

### Heart Support Australia

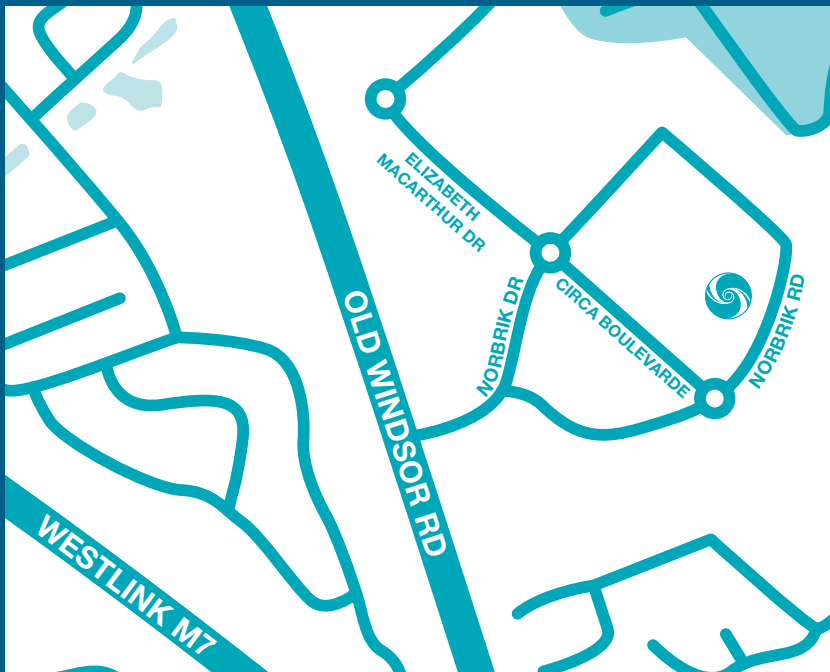
[www.heartnet.org.au](http://www.heartnet.org.au) - 02 6280 7211

### Diabetes Information

[www.australiandiabetescouncil.com.au](http://www.australiandiabetescouncil.com.au) - 1300 342 238

## References

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[www.cvdcheck.org.au](http://www.cvdcheck.org.au)
2. **American Heart Association. Recovering from a heart attack.**  
[www.americanheart.org](http://www.americanheart.org)
3. **Heart Foundation of Australia. Heart disease risk factors.**  
[www.Heartfoundation.org.au](http://www.Heartfoundation.org.au)
4. **Heart Foundation of Australia. Eating and Drinking**  
[www.Heartfoundation.org.au](http://www.Heartfoundation.org.au)
5. **Quitting Smoking**  
[www.quit.org.au](http://www.quit.org.au)
6. **National Prescribing service**  
[www.nps.org.au /consumers](http://www.nps.org.au/consumers)
7. **Australian Commission on Quality and safety in healthcare: National Safety and Quality Health Service Standards, Standard 1,2,3,4,5 & 6** - [www.safetyandquality.gov.au](http://www.safetyandquality.gov.au)



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