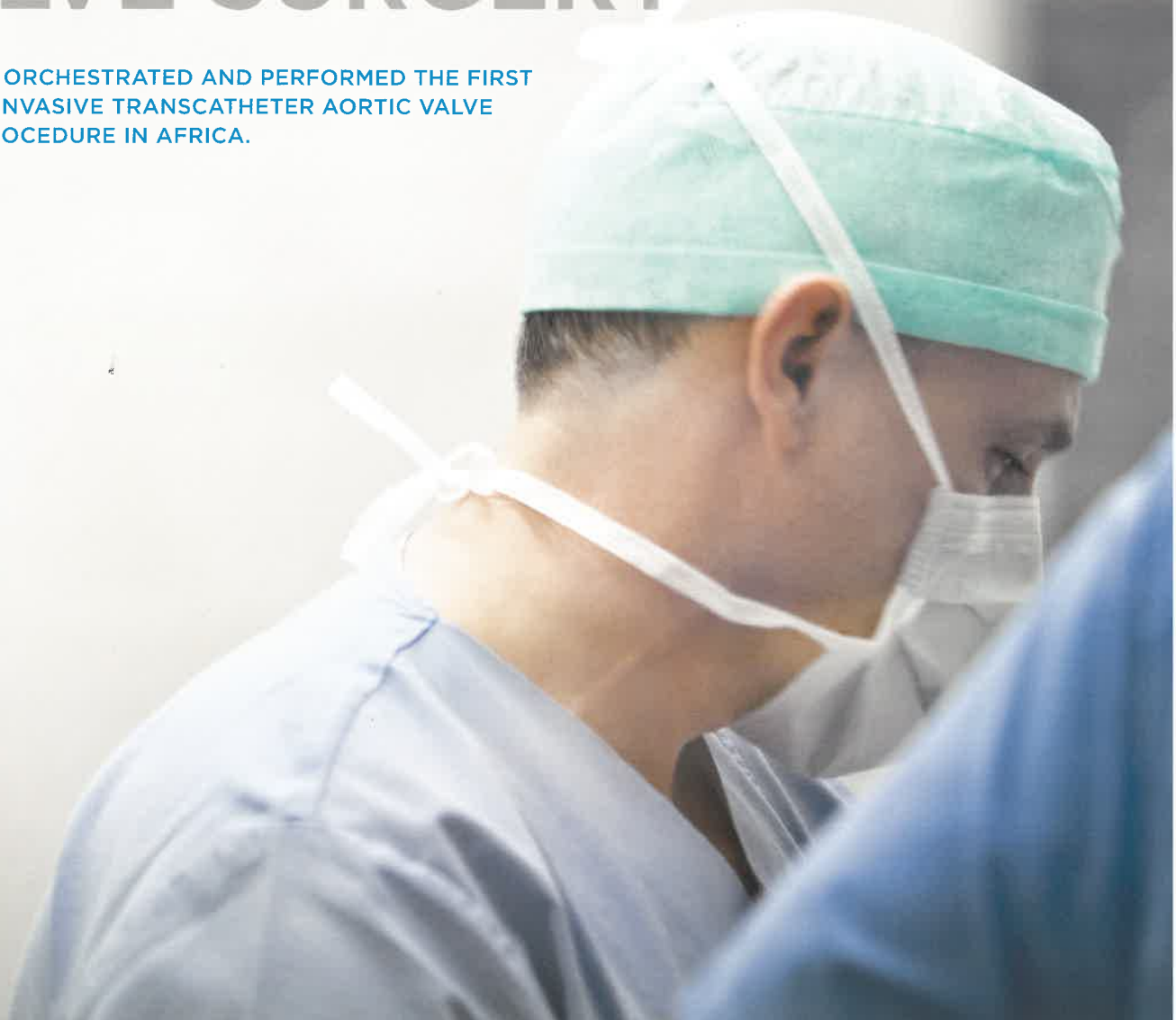


CARDIAC UNIT HEART PROGRAMME

CORONARY ARTERY BYPASS AND HEART VALVE SURGERY

MEDICLINIC ORCHESTRATED AND PERFORMED THE FIRST
MINIMALLY INVASIVE TRANSCATHETER AORTIC VALVE
IMPLANT PROCEDURE IN AFRICA.



WELCOME TO MEDICLINIC BLOEMFONTEIN

The aim of this journal is to give you more information about your condition and help you understand what to expect during your hospital stay. It also provides you with a convenient place to record your experiences and share details of your recuperation with friends and family.

THIS HEART JOURNAL BELONGS TO:

DATE OF OPERATION:

HEART SURGEON:

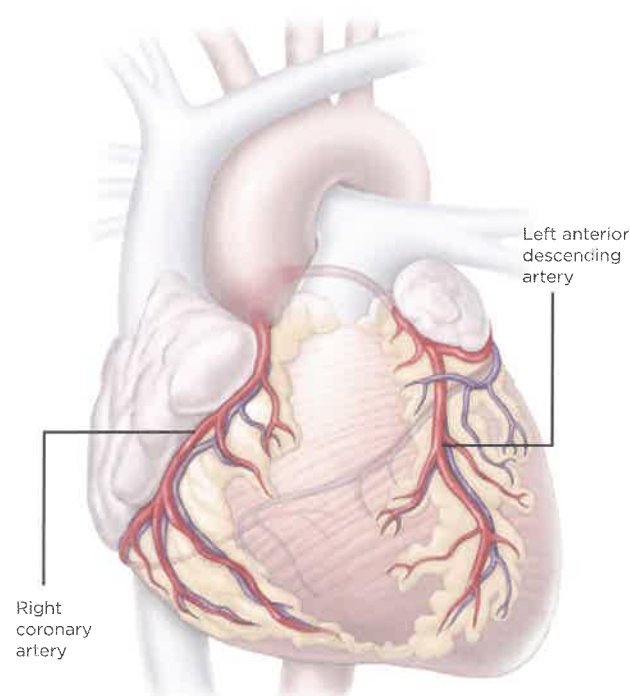
INDEX

Why is a coronary artery bypass graft (CABG) performed?	2
What is the procedure for a CABG?	2
What can I expect in the Critical Care Unit?	4
What is the routine in the CCU?	5
What can I expect in the Cardiothoracic Unit?	7
How are heart valve replacements performed?	7
What happens after I am discharged?	9
What daily activities can I perform?	10
Things to avoid doing	11
What exercise programme can I follow?	11
What symptoms might I experience at home?	13
What do I need to know?	16
Will I need medication to take home?	18
How do I make arrangements for payment of my account?	18
My ECG on admission	19
Photo of my angiogram	20

THIS DOCUMENT IS THE PROPERTY OF MEDICLINIC SOUTHERN AFRICA AND MAY NOT BE REPRINTED, DISTRIBUTED OR USED WITHOUT CONSENT FROM MEDICLINIC SOUTHERN AFRICA TRAINING AND DEVELOPMENT: 2012.

WHY IS A CORONARY ARTERY BYPASS GRAFT (CABG) PERFORMED?

When a clot forms in one or both of the coronary arteries it causes an obstruction or blockage in the heart muscle (myocardium) which results in muscle damage and a heart attack (myocardial infarction). The aim of the coronary bypass operation is to bypass the blockage or obstruction in the coronary artery in order to supply the heart muscle below the blockage with oxygenated blood.



ABOVE: LOCATION OF DAMAGE CAUSED BY A BLOOD CLOT DUE TO ATHEROSCLEROSIS

WHAT IS THE PROCEDURE FOR A CABG?

Veins for the bypass are harvested from the legs or arms. Blood circulation in those limbs is not affected as other vessels take over the function of the veins harvested. An artery in the chest, the left internal mammary artery, can also be used.

During the procedure, an incision is made through the breastbone (sternum) and the harvested artery is affixed between the main artery to the heart (aorta) and the blocked artery. The sternum is then wired together and takes about six weeks to reattach. The wires are not removed.

It is important to remember that this operation restores the blood supply to the heart, but does not remove the cause of the condition. If you do not reduce your risk factors the condition can reoccur, even in the new transplanted vessels.

Cardiac bypass procedures are performed on a daily basis and are no longer the traumatic surgical intervention they were in the past. Technology has improved dramatically and today the operation can be performed in three to six hours, depending on the number of bypasses required and associated procedures that might be needed, e.g. valve replacements.

PREPARATION

As a cardiac bypass or valve replacement is a major operation, patients are required to provide written consent for surgery. It is important to know that your cardiologist and thoracic surgeon have consulted with each other regarding the photographs of your angiogram and that they have agreed on the necessity of the operation. In some cases a bypass operation needs to be performed immediately as the obstructions in the arteries may be so severe that damage to the heart muscle is imminent. This is called an emergency cardiac bypass.

TESTS AND PROCEDURES

X-rays

Chest X-rays indicate to the surgeon the size of the heart, the position of the aorta and the condition of the lungs. Problems that develop after the operation can be easily identified by comparing post-operative X-rays with those taken prior to surgery.

Blood tests

Similarly, blood is drawn before the procedure and sent to a laboratory for testing. The surgeon uses blood tests to determine whether there is a shortage of electrolytes, poor renal function and signs of infection or anaemia. Results obtained after the procedure are then compared to check for any changes.

PHYSICAL PREPARATION

Your chest, arms and legs will be shaved. This is necessary, particularly in men, to prevent infection, which can be caused by hair in the wounds. It also makes it easier to apply and remove plasters comfortably. The legs are not shaved for valve replacement procedures.

CLOTHING AND PERSONAL ITEMS

You will be given antiseptic soap for bathing and washing and supplied with a theatre gown before the procedure. Dentures, nail polish and jewellery must be removed and preferably sent home, along with money and any other valuables.

CONSULTATIONS

You will be seen by the following members of your surgical or healthcare team, prior to your procedure:

Surgeon

To make sure you understand everything you need to know about the procedure, the number of arteries to be bypassed and what to expect

Anaesthetist

To establish your medical history, prescribe a sleeping tablet for the night prior to the procedure and a tranquilliser, which you can take a few hours before going into theatre

Physiotherapist

It is important that all secretions (mucus) in the lungs are loosened and discharged to prevent complications after the procedure. The physiotherapist will show you how to perform pulmonary functions, such as breathing exercises and coughing, that will help you clear your lungs properly.

Critical Care Unit nursing practitioner

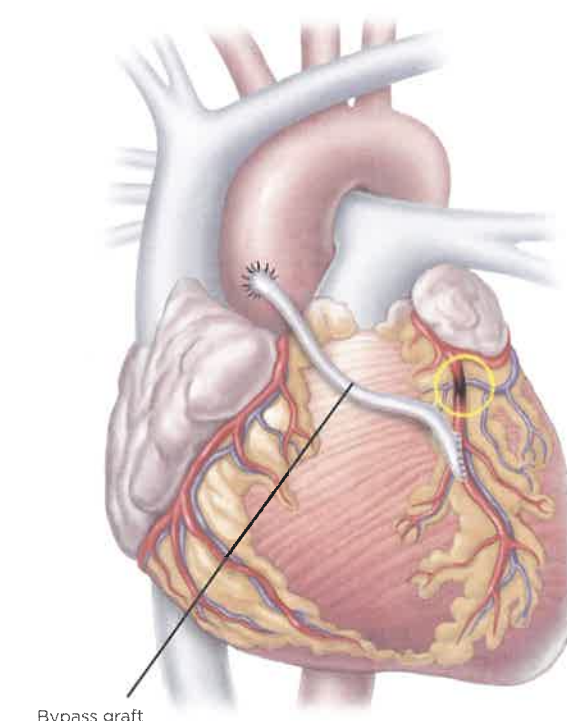
To explain the Critical Care Unit (CCU) routines and what you can expect when you wake up in the unit after your procedure

Social worker

To provide pre-operative emotional support

Cardiac Rehabilitation Unit nursing practitioner

To clarify any uncertainties you may have and advise you about the help and support you will receive after the procedure



ABOVE: POSITIONING OF THE BYPASS GRAFT TO RESTORE BLOOD SUPPLY TO THE HEART

WHAT CAN I EXPECT IN THE CRITICAL CARE UNIT?

After the operation, while you are still anaesthetised, you will be transferred to the Critical Care Unit (CCU) for specialised care. Equipment there can include:

MONITORS

- Monitors are attached for monitoring the pressure levels in the heart chambers, your heart rate and rhythm, as well as your blood pressure. Temperature and oxygen levels will also be monitored.
- The monitors are very finely calibrated and alarms can be activated with the slightest movement or vibration. Bear in mind an alarm does not necessarily mean that something is wrong. Rest assured that a nursing practitioner will be at your bedside to continuously monitor your progress.

VENTILATOR

- You will still be anaesthetised when you are wheeled out of theatre and will need to be attached to a ventilator to assist your breathing.
- The ventilator supplies oxygen to the lungs via a tube through the mouth and vocal cords. You will not be able to speak while on the ventilator but will be able to do so as soon as the tube is removed.
- The ventilator does not prevent you breathing on your own but supports your breathing capacity.
- As soon as you are breathing on your own comfortably, are awake and have adequate blood oxygen levels, the ventilator will be removed (usually within six to eight hours after your procedure).
- While you are being ventilated, excess mucus from the lungs will be suctioned every four hours, using a catheter. Sterile water, injected via the catheter, will help loosen mucus in the lungs.
- Once the ventilator is removed an oxygen mask will be placed over your nose and mouth and must be kept in place until you are transferred to the unit. It should only be removed to eat, wash your face, shave or brush your teeth.

GASTRIC TUBE

A thin tube is inserted through your mouth into your stomach to drain gastric juices and prevent vomiting. Your prescribed medication will be administered via this tube.

PACEMAKER WIRE

A thin wire which protrudes from your chest has been put in place for attaching a pacemaker to your heart, should this become necessary.

CENTRAL VENOUS PRESSURE (CVP) LINE

A CVP line is inserted into a neck vein. All intravenous medication is administered through the CVP line which also measures pressure levels in the heart.

ARTERIAL LINE

A thin tube is inserted into an artery in the pulse area. This is to draw blood when necessary and to measure blood pressure. It is important that you keep your arm still to ensure accurate readings.

URINARY CATHETER

A urinary catheter is inserted to measure your urine output hourly and plays an important role in balancing fluid levels.

UNDERWATER DRAINAGE (UWD)

Two plastic tubes are inserted to drain blood, and later fluid, from your chest cavity to prevent it from accumulating and constricting the heart. These tubes are attached to a closed draining system. The drain works using negative suction, which can occasionally cause discomfort.

INFUSION PUMPS

These are placed above the bed for use with infusion lines (drips). They carefully regulate fluids and are attached throughout your hospital stay. They are used for administering medication and additional fluids which may be needed to regulate blood pressure and manage pain.

OUR 'CASTLE KEEP' UNIT LAYOUT ENSURES THAT NURSING PRACTITIONERS HAVE DIRECT VISIBILITY OF PATIENTS AT ALL TIMES.



WHAT IS THE ROUTINE IN THE CCU?

Day and night staff relieve each other at 06:45 and 18:45. A nursing practitioner will be allocated to ensure constant monitoring while you are on a ventilator. Doctors' rounds take place just after 07:00 every morning. X-rays of your chest are taken and the laboratory nursing practitioner is on hand to obtain blood samples for any blood tests requested by your doctor.

BATH TIMES

These are usually early in the morning or evening. You will be washed and shaved, if necessary, in your bed.

MEAL AND TEA TIMES

- 08:00: Breakfast
- 10:00: Tea
- 12:00: Lunch
- 14:30: Tea
- 17:00: Dinner
- 20:00: Tea

VISITING HOURS

- 10:30 – 11:00
- 15:00 – 16:00
- 19:15 – 20:00

Visitors play an important role in your recovery. However, patients need ample rest so it is important to have guidelines for friends and families to follow.

- As soon as you come out of theatre your family can discuss the procedure with the surgeon and nursing practitioner.
- Only two family members will be allowed per visit.
- Children under the age of 12 are not allowed in the CCU due to the risk of infection to both the child and patient.
- Controlled visits are in the best interest of patients.
- All persons entering the CCU must wash their hands or rub them with antiseptic fluid (available at the doors to the unit).

PHYSIOTHERAPY

Physiotherapy is given twice a day and forms a crucial part of your recovery programme. A large amount of mucus is formed as a result of the anaesthetic, especially if you are a smoker. If these secretions are not cleared from the lungs, pneumonia can develop. Your breathing will also tend to be very shallow, because you may experience pain when breathing. This can cause the lower part of the lungs to collapse.

The physiotherapist will teach you how to:

- Cough effectively
- Do deep breathing exercises
- Move to a chair 6-8 hours after the ventilator has been removed, provided there are no complications

When you are transferred from the CCU to a unit, usually on the second or third day after the procedure, you will be able to remove the oxygen mask but will still receive physiotherapy twice daily.

WOUNDS

These are dressed should oozing occur.

PAIN MANAGEMENT

Painkillers will be administered by means of a continuous drip. You may request a higher dosage if you find your pain to be unbearable. You will receive a sleeping tablet at night, as a good night's sleep and regular rest periods are very important for your recovery.

TRANSFER TO THE SURGICAL UNIT

If there are no complications, you will be transferred to the Surgical Unit two to three days after your procedure. Usually, all drips, drainage pipes, the oxygen mask and the urinary catheter are removed in the CCU before your transfer. Your CVP line may be left in place.

WHAT CAN I EXPECT IN THE CARDIOTHORACIC UNIT?

- The physiotherapist will assist you to start walking short distances down the passage.
- You can also start doing basic things for yourself, such as showering, shaving, dressing and going to the toilet.
- Regular bowel movements will recommence.
- The nursing practitioner will show you and your family how to dress your wounds at home.
- Do not hesitate to ask if you are unsure about anything.
- Medication will probably be required for the rest of your life and a private prescription will be provided by your doctor for any medication you need to take home.
- Make sure you and your family understand how and when medication needs to be taken and what each tablet is for.
- Inform any other doctor, dentist or pharmacist you see about your condition and the medications you have been prescribed.
- You are advised not to interrupt your medication, or stop taking it, without first consulting your cardiologist or surgeon.

TIPS

- Be meticulous about taking your medication regularly. The dosages should be distributed evenly over 24 hours, for example, every eight hours.
- Contact your doctor if you notice any general side effects, i.e. low blood pressure.
- Renew your prescriptions in time to ensure that you do not run out of medication.

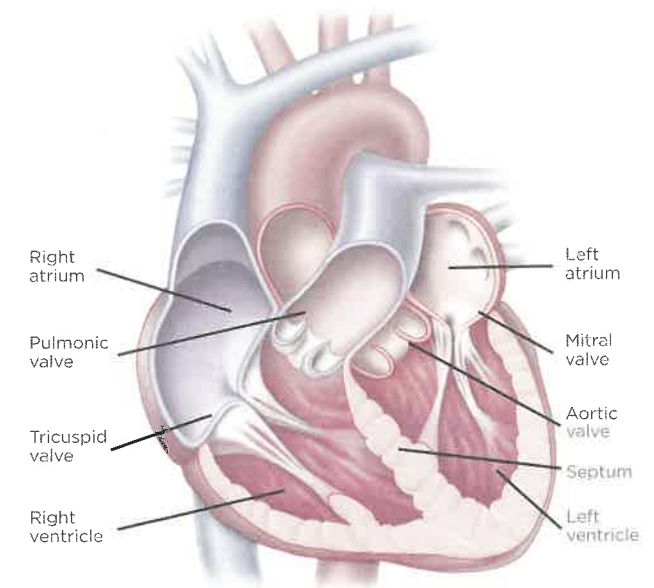
HOW ARE HEART VALVE REPLACEMENTS PERFORMED?

WHAT DO HEART VALVES LOOK LIKE?

The tricuspid and mitral valves look very similar and divide the upper chambers of the heart (atria) from the lower chambers (ventricles). The aortic valve forms the exit from the heart to the main artery (aorta) and the pulmonary valve separates the heart from the pulmonary artery. When a valve does not close properly there is a backwash, leakage or blockage of the blood flow. This results in affected chambers of the heart becoming enlarged, which reduces the effectiveness of the heart muscle. The signs and symptoms of problems with a heart valve include exhaustion, shortness of breath, light-headedness, chest pain (angina) and fainting.

HOW IS A VALVE REPAIRED?

- Two procedures can be performed to repair valves:
- The valve can be repaired by inserting a ring into it.
 - The valve can be replaced. During a valve replacement, the whole valve is removed and replaced with a tissue or mechanical valve.



RIGHT: CROSS SECTION OF THE HUMAN HEART





A. MECHANICAL VALVE
B. VALVE RING
C. TISSUE VALVE
D. TISSUE VALVE WITH VALVE RING

HOME CARE

Valve replacement patients are essentially treated in the same way as cardiac bypass patients, except they do not need to have incisions in the legs or arms, as they do not require vein harvesting. Tight, white (anti-embolism) stockings are worn on both legs for six weeks to prevent the forming of blood clots after heart valve replacement. (Not all doctors prescribe these).

If you have had a mechanical heart valve replacement you will probably have to take Warfarin®, a bright pink tablet, for the rest of your life. This is an anticoagulant and extends coagulation time of the blood, without making it thinner. The mechanical valve is recognised as a foreign object by the body. Warfarin® is needed to prevent blood from clotting around it. Warfarin® can be dangerous if not taken correctly. It is important to take it with water at the same time every day. Regular blood tests at a laboratory are essential. Called the Prothrombin Index (PI) or International Normalised Ratio (INR) tests, they are used to determine what dose of Warfarin® is prescribed. Normally PI should be kept between 30% and 50% and the INR value between 2.0 and 3.5.

Should you experience any of the following symptoms contact your doctor immediately:

- Blood in urine or stool
- Small pinpoint bleeding on the skin or large blue bruises
- Blood spots in the mucus when coughing
- Nosebleeds

If you visit a doctor or dentist you must inform them of the anticoagulation treatment you are using. It is advisable to wear a Medic Alert bracelet.

The following should not be taken with Warfarin®:

- Aspirin
- Certain antibiotics
- Anti-inflammatory medication
- Vitamin K
- Alcohol intake should be limited to a maximum of two glasses a day
- Certain food types affect the absorption of Warfarin® in the intestines and care needs to be taken regarding these

Recommendations:

- Eat only one portion of green leafy vegetables (broccoli, cabbage, spinach, lettuce or avocado) per day.
- Avoid the following foods approximately two hours before or after taking Warfarin®: bananas, tomatoes, egg yolk, fish, fish oil or other plant oils, and potato chips.
- Warfarin® should not be taken with orange juice or other citrus juices and is best taken with water.

WHAT HAPPENS AFTER I AM DISCHARGED?

Length of hospitalisation differs from patient to patient. You will only be discharged once your condition is stable and your cardiologist and thoracic surgeon are satisfied with your progress.

The amount of sick leave you require will depend on the type of work that you do. Cardiac bypass patients usually need six to eight weeks of sick leave to recover. If you do not experience any complications, the next appointment with your surgeon and cardiologist will be six weeks after the operation.

The areas around your wounds may become itchy, swollen or painful and a numb feeling may occur around the incision. Examine wounds regularly for danger signs such as redness, pain, a warm feeling, fever and oozing.

Pain may occur around the wound areas and you may experience muscular pain and referred pain below the shoulder or between the shoulder blades. This can be uncomfortable but will gradually disappear. Do not be afraid to take the pain medication prescribed for you. In some cases, constipation occurs. This can be prevented by staying active, drinking enough water and eating foods that are rich in fibre. If you continue to experience problems you can take a light laxative.

Contact your doctor immediately should you experience any of the following:

- Chest pain of the type experienced before the procedure
- Any oozing from your chest wound
- A fever that lasts for two days
- Flu symptoms lasting more than two days (pain, cold, shivering, lack of appetite and fatigue)
- Shortness of breath which continues after activity is ceased
- Nausea, visual disturbances or dizziness

Weight gain, swollen ankles, severe fatigue, a tender feeling around the abdomen and difficulty breathing when lying down at night could be signs of heart failure. This can be corrected with medication.

The first week after discharge is the most important time for getting your recovery on track. The suggested walking programme should be followed strictly. You will gradually walk further, and fatigue and shortness of breath will become less problematic, as your heart and lungs become fitter.



WHAT DAILY ACTIVITIES CAN I PERFORM?

Follow these guidelines to get back into your routine.

WEEK ONE

- Your level of activity must be about the same as when you were discharged from hospital.
- Rest between activities.
- Get up every day, shower or take a bath, shave and wash your hair at a relaxed pace.
- Avoid excessively hot or cold water when bathing or showering.
- Follow the walking programme on a flat surface.
- You may travel short distances in a car with someone else but do not drive yourself.
- Keep yourself busy with peaceful activities, such as reading, watching TV, sewing and caring for indoor plants.
- Rest at least twice a day.
- Limit the number of visitors and telephone calls you receive each day.
- Do not stand for long periods and avoid severe weather conditions.
- You can perform light household tasks but do not make your bed yourself.
- Support your chest when sneezing or coughing.

WEEK TWO

- You can do all the activities mentioned above.
- You can pull your bedding straight but do not make your own bed.
- Perform light household activities, such as watering the garden with a hosepipe.
- Continue with the walking programme.

- Go on outings such as shopping. Do not leave your home for more than two hours and do not drive by yourself.
- Perform light desk work such as writing letters.

WEEK THREE

- You can do all the activities mentioned above.
- Continue with the walking programme and intensify gradually.
- Take longer outings.
- Go shopping but do not carry heavy bags.
- Do household activities such as washing dishes.
- Perform light gardening tasks, e.g. weeding while sitting.

WEEK FOUR

- You can do all the activities mentioned above.
- Continue with the walking programme.
- Perform light household tasks.
- Enjoy social outings of a light and relaxing nature, e.g. going to the movies.

WEEK FIVE

- You can do all the activities mentioned above.
- Continue with the walking programme.
- You may resume sexual activities.
- Increase household tasks, gardening and social engagements.

WEEK SIX

- You can do all the activities mentioned above.
- Continue with the walking programme or join a cardiac rehabilitation exercise programme.
- Resume normal household tasks.
- Return to work after consulting your doctor.
- Do gardening (but no digging).

THINGS TO AVOID DOING

WEEKS ONE TO FOUR

- Lifting objects heavier than 2kg, such as suitcases, groceries, children or pets
- Opening or closing heavy doors
- Moving heavy furniture
- Twisting off tight lids
- Forcing windows open
- Excessive stretching movements
- Walking uphill
- Gardening
- Competitive activities
- Painting and woodwork
- Driving

WEEKS FIVE TO SIX

- Lifting heavy objects
- Walking up steep hills
- Mowing the lawn and digging in the garden
- Driving

WHAT EXERCISE PROGRAMME CAN I FOLLOW?

Human beings are total entities: What influences the body influences the mind. When we are ill it is very difficult to function as a complete human being. However, when we feel good we experience feelings of satisfaction that motivate us to be fully involved in our work and hobbies. We can only achieve this if we have a certain level of fitness. Fitness means having enough energy to perform our daily tasks without getting tired. As a cardiac patient, it is absolutely essential that you follow an exercise programme after discharge to help you to recover your fitness without excessive strain. Walking is the best form of exercise after a coronary bypass operation.

WALKING AS AN EXERCISE

Our bodies are made for walking. It is the most natural form of exercise, as well as the best preventative medicine for heart disease and obesity. Walking is for everybody, for 'lazy' people, older people and people with heart disease. It involves no stress to the knees and ankles while giving your heart and lungs all the exercise they need to get stronger.

Walking is beneficial for cardiac rehabilitation because:

- The heart needs less oxygen with regular exercise.
- The heart's oxygen supply improves as the amount of oxygen reaching it increases.
- The repair of arteries surrounding the heart is accelerated as collateral arteries are formed and take over function from blocked vessels.
- The adhesion potential of the blood platelets is reduced, which helps prevent arteries from becoming blocked.
- Exercise improves the body's natural ability to dissolve blood clots (thrombi).
- Exercise has a positive effect on risk factors, reducing cholesterol levels, decreasing high blood pressure, preventing obesity, reducing stress, improving self-image and relieving anxiety and depression.

THE WALKING PROGRAMME

For the first two days, you should walk around inside the house. For the next two, you can allocate periods for walking around in the garden, after which the walking programme should be followed (around the block or on a straight road).

WEEK	WALKING TIME	FREQUENCY
1	A total of 5 minutes (2½ minutes back and forth)	2 x daily
2	A total of 10 minutes (5 minutes back and forth)	2 x daily
3	A total of 15 minutes (7½ minutes back and forth)	Daily
4	A total of 20 minutes (10 minutes back and forth)	Daily
5	A total of 25 minutes (12½ minutes back and forth)	Daily (or 4 x per week)
6	A total of 30 minutes (15 minutes back and forth)	Daily (or 4 x per week)

GUIDELINES

- It is important to walk the distance continuously, in one stretch. Do not count all the short distances you walk during the day and then convince yourself you have walked far enough. Also, do not attempt to make up any distance lost on one day by walking further than required the following day. Walk the recommended daily distance every day.



- Wear comfortable clothes and shoes. Make sure you dress in layers so you can strip off if you become too hot along the route.
- Do not walk if you have a cold or flu, diarrhoea, or are vomiting. Do not walk if you have a sore throat. Consult your pharmacist and if this does not subside within two days, your general practitioner.
- Never hold your breath while walking.
- Do not walk directly after a meal.
- Walk during cooler times in summer and warmer times in winter.
- Avoid walking in extremely cold and rainy weather.
- It is important not to regard the walking programme as a 'treatment' or 'compulsory activity' but rather to see it as part of your lifestyle. Where possible, walk with a friend or family member for relaxation and choose a pleasant walking environment.

A MORE STRENUOUS EXERCISE PROGRAMME

After about six weeks and a check-up visit to your surgeon and cardiologist, you should be ready to start a more comprehensive and challenging exercise programme. We recommend that you join a cardiac rehabilitation programme, where you can exercise under the supervision of a rehabilitation nursing practitioner and biokineticist. If no such facility is available in your area, ask your doctor how many beats your pulse may increase by during exercise from your resting pulse.

It is very important to note that once you have started an exercise programme, you should follow it regularly, at least twice a week. To exercise on and off, e.g. exercising intensively once a week, is not recommended. If you only exercise twice a week, you should also continue with the walking programme.

To improve your general level of fitness, and particularly cardiac fitness, you must choose a form of exercise that is aerobic or dynamic. This includes any rhythmic, repetitive activity that makes use of the large muscles and is carried out continuously for at least 15 minutes. Aerobic exercises include walking, jogging, cycling and even dancing. Static exercises, like weight-lifting and arm-wrestling, demand strength and increase blood pressure and are not recommended. When participating in any sport, you must have the required level of fitness prior to commencing.

As your fitness improves, you can consider resuming any sporting activities you enjoyed previously. Before doing so, however, you should consult your doctor.

It is important to perform warm-up exercises in order to gradually increase your heart rate and breathing and prepare your body for the exercise or sport to follow. The road to fitness should be positive, not painful or unpleasant. Aim to enjoy life.

WHAT SYMPTOMS MIGHT I EXPERIENCE AT HOME?

Do not get anxious if you experience some pain after discharge. This is usually due to the surgical procedure.

CHEST PAIN

Chest pain after a coronary bypass is generally ascribed to pain in the sternum, due to the surgical procedure. The chest is sutured with steel wires and takes time to heal. Any excessive movement can injure the muscles and cause chest pain. You may also experience pain in other areas of the chest. Chest pain is usually localised and worsens or improves when you apply pressure to the area, breathe or change position. Chest pain may last hours, or days, as your rib muscles were stretched unnaturally during the operation. You may also experience pain below the shoulder blade, which can be relieved by massage.

Excessive movements above the shoulders and head, as well as below the trunk, should be limited to your personal care, such as washing, brushing and drying your hair, and putting on your anti-embolism stockings and your shoes. If you experience chest pain, try to establish what you were doing the previous day and whether you may have overdone things. Take medication for the pain and see if it improves. If it does not, consult your doctor. It is essential that you take pain-killers regularly, at least two to three times a day, for the first two to three weeks and thereafter whenever necessary. Do not wait for the pain to become unbearable before taking your pain medication.

If you experience a burning, intense chest pain, accompanied by difficulty breathing, pressure on the chest, pain that spreads to the throat, jaw and arms,

sweatiness and/or palpitations, contact your doctor immediately.

PALPITATIONS

You may experience heart palpitations, particularly after you have been busy, for example with personal care or activity that may cause fatigue. If your heart beats unusually fast, slowly or irregularly, it is important to note whether you feel dizziness or lightheadedness at the same time. If you are concerned, contact your doctor.

FATIGUE AND DEPRESSION

You will find that you get tired easily, especially when you have been active. The fatigue may be accompanied by shortness of breath. This will improve as you recover. It is important to perform and complete activities yourself, as well as following the walking programme, in order to improve your heart and lung capacity.

Perform only those tasks and activities expected of you and be careful not to do anything that might damage your sternum. It is normal to experience frustration when you find you cannot meet deadlines. Try to relax and give yourself time to recover.

Exhaustion and tiredness are often accompanied by feelings of depression. This is normal after cardiac surgery. Bear in mind that your emotions will fluctuate and evaluate your feelings each day. You will find things go better on some days than others. Do not overdo it on good days and kick back on tough days. Exhaustion and depression will improve over time. Take it steady and make sure you give yourself enough rest to boost recovery.



LACK OF CONCENTRATION AND INTEREST

During your hospitalisation, you were given anaesthetics, painkillers and sleeping tablets. These are still in your system after discharge. You may find you struggle to concentrate, are forgetful and may lack interest in things around you. This will improve with time. In the interim, be careful not to sign important documents or make important decisions regarding your future, rather wait until you are feeling stronger.

It does not matter if you are forgetful, or fall asleep in front of the TV, or with a book on your lap. Try to extend your interests gradually and develop a hobby, possibly something you never previously had time for.

LOSS OF APPETITE AND NAUSEA

It is common to experience loss of appetite and you may find that some foods make you nauseous. You may also be unable to taste or smell food due to medications you may be taking. Try to take your medication with meals, so they have less of an impact on your stomach. Aim to eat smaller portions, six times a day, as opposed to big meals, e.g. breakfast, tea, lunch, afternoon tea, dinner and something small about an

hour before you go to bed. It is important to eat and drink enough to absorb adequate nutrients to build up your strength. Ask your pharmacist to recommend a nutritional supplement to help you.

LACK OF ENERGY

You will find that you do not have much energy and it is therefore important to conserve as much energy as possible.

It helps to plan your day. After you get up, wash, dress and enjoy a leisurely breakfast, do not get back into bed, no matter how great the temptation.

If you become very tired, rest or sit in an easy chair with your feet up. It is important to rest in the late morning and again during the afternoon.

Plan activities systematically, alternating easy and difficult tasks. Distribute your activity throughout your day, rather than trying to do everything at once. After a cardiac bypass, it is important to start out with lighter activities, progressing gradually towards more demanding tasks as you get stronger.

ADVANCES IN CLINICAL SLEEP SCIENCE EMPHASISE THE IMPORTANCE OF SLEEP PATTERNS ON FUNCTIONAL STATUS AND RECOVERY.

TROUBLE SLEEPING

It is not known why unusual sleeping habits or problems occur after a bypass procedure. It may be that during heart surgery, or the time spent in the CCU, your body clock, or circadian rhythm, gets disturbed and it can take a while for it to revert to a more normal routine. Most patients find their sleep patterns return to normal five to seven weeks after the procedure. Take care not to sleep for hours at a time during the day as it is likely to result in sleeplessness at night.

NIGHT SWEATS

This problem usually resolves itself, although occasionally night sweats can indicate a serious problem, particularly if they are associated with high fevers. It is a side effect that seems to be unique to heart surgery and other major operations and resolves within a month or two.

NUMBNESS

Numbness is another common complication, particularly if it is located in the left chest area or left breast in women. It also seems to be more common in patients in whom the left internal mammary artery was used for a bypass graft.

Some patients notice numbness along the vein harvest site in the arm or leg, particularly around the ankle area. This can be related to damage to the small branches of the nerves that intertwine with the saphenous vein and usually subsides within a couple of months.

Some patients experience numbness or tingling in their little fingers, or last two fingers, in one or both hands. This is a common complaint thought to be related to the stretching of the ulnar nerve during the procedure. This problem usually subsides within five to six weeks, but it can sometimes take a bit longer.

EYE PROBLEMS

Occasionally patients complain that their spectacles are a bit out of focus. This seems to be a problem that is not specific to heart surgery but occurs after all types of major surgery. Ophthalmologists usually advise patients to wait for a couple of months after a procedure before getting a change in their spectacle

prescription. This is because visual acuity tends to return to pre-surgery levels with time.

BLOOD PRESSURE MEDICATION

Some patients on blood pressure (antihypertensive) medication prior to the procedure need less, or sometimes no medication, after the procedure. A month later, however, their need for medication returns. This happens because, during the two to four days you are in a hospital bed, your vascular tone relaxes.

This results in lower blood pressure and reduces the need for antihypertensive medication. After a month to six weeks after the procedure, your vascular tone will return to pre-surgery levels and blood pressure will increase, requiring a return to the medication and dose you may have needed before surgery.

DIABETICS

Patients with diabetes often return home with different insulin requirements than experienced prior to heart surgery. Some, who did not require insulin, will need it and others, who may have been on low doses, will find they can do without it. In general, it takes five to seven weeks for insulin levels to settle and insulin requirements to return to pre-surgery levels.

LUMP AT THE TOP OF THE STERNUM

Some patients notice a lump at the top of the breastbone that was not there before the procedure. If the lump is red and tender it could signify an infection, but is generally related to the type of stitching required to close the sternum.

The layer of fat under the skin does not hold stitches smoothly, due to its cottage cheese-like constituency and deeper stitches are required, which can cause tissue wadding around the stitch site. Deeper stitches are also required to prevent the skin in the middle of the breastbone being pulled or stretched. This type of lumping will resolve and even out over time.

INCREASED SUSCEPTIBILITY TO COLD

Some patients experience feeling cold more quickly than they did before surgery. This is nothing to worry about and will resolve between six and seven weeks after the procedure.

WHAT DO I NEED TO KNOW?

RETURNING TO WORK

- You should be able to return to work six to eight weeks after surgery. It is important to prioritise your workload so you do not take on too much, or let work take priority over your health.
- Use stress in a healthy way so you function effectively. Learn to say no and to delegate tasks.
- Use tea and meal times to relax. Do not drink your tea and eat lunch at your desk.
- It is of the utmost importance you have regular rest breaks from work, continue the walking programme in addition to work activity, get enough sleep and eat properly.

MAINTAIN A GOOD POSTURE

- If you are not taking your painkillers regularly it is easy to adopt a bad posture, such as walking with your back bent or turning your body and head simultaneously. Make a determined effort to avoid this.
- Sit and stand up straight with a good posture and keep your back straight when you walk. You should also make sure you turn your neck normally.
- Bend your knees and keep your back straight when you bend or stoop.
- Do not bend to pick up heavy objects, use a pulling action, as opposed to a lifting one.

TIPS FOR YOUR PARTNER, CHILDREN AND OTHER FAMILY MEMBERS

- Your partner or parent is still the same person they were before the operation. Nothing has changed and they are still entitled to carry out their usual duties and bear their normal responsibilities.
- Never exclude them from decisions or problems that need to be faced, even if they are difficult.
- There will be times when they experience difficulties in dealing with their cardiac bypass. They may be grumpy and sullen at times, or downhearted and depressed. In some cases, they may be scared to exercise, or tend to over-exercise. They may also resort to excessive use of alcohol, or experience extreme religious fervour.
- The co-operation of the whole family is necessary to help support a patient through this difficult but temporary period of adaptation.

RESUMING SEXUAL RELATIONS

- If you had satisfying sexual relations before the procedure there is no reason why it should change.
- If you find your medication affects your sexual functioning, discuss this with your doctor. Fears and unanswered questions can lead to relationship issues and the best way to prevent long-term problems developing is to talk openly and honestly about any issues you may have.
- Touching and caressing is important after the procedure but try to avoid sexual intercourse for the first four to six weeks. If caressing leads to intercourse during this period, it is not necessarily dangerous, as your pulse only increases to a rapid pace for a few seconds.
- Sexual intercourse demands the same amount of energy as climbing two sets of stairs quickly. If sex causes angina, it is advisable to restrict it to times when you are feeling rested, for example, in the early morning or on weekends.

USE GOOD BODY MECHANICS

Use both hands. Perform daily activities at a comfortable working height. Do not do things that require too much reaching above your head or bending. Try to work at waist height and avoid stretching and stooping.



ANTI-EMBOLISM STOCKINGS

These are not comfortable and not every doctor prescribes them. If you have been advised to wear them to prevent the formation of blood clots, it is essential you wear them both and make sure they are pulled tight. You may take them off at night when you sleep. Stockings are generally worn continuously for the first six weeks and thereafter only when your feet swell. The wearing period may be shortened in consultation with your surgeon. Do not cross your legs when you sit as this hampers blood flow.

EMOTIONAL REACTIONS TO CARDIAC SURGERY

Cardiac surgery is a traumatic event and it is normal to experience the following reactions:

- Shock and denial
- Anger and feelings of guilt. Anger because life and your body have failed you, or anger towards God for having allowed it to happen. Guilt about your lifestyle — smoking, poor eating habits, stress, inactivity, etc.
- Negotiations with oneself, one's family and with God. This phase is characterised by the perception that you need to adapt your lifestyle, e.g. by giving up smoking, eating less, etc.

- Depression, feelings of despondency, inadequacy and despair
- Acceptance and adjustment

DURING HOSPITALISATION YOU MAY EXPERIENCE:

- A fear of pain, unfamiliar medical procedures and a fear of dying
- Anxious recollections about what happened before you were hospitalised, for example, a heart attack
- Gratitude that you are still alive, tempered by a strong realisation of your mortality
- An overwhelming awareness of your heart
- Concern about your life outside the hospital, e.g. work commitments, finances and your family

ONCE YOU HAVE BEEN DISCHARGED YOU MAY:

- Have mood swings and anxiety attacks because you are no longer in the safe environment of the hospital. Console yourself with the knowledge that your doctor would not have discharged you unless he or she was completely satisfied with your progress. Accept that you have had a cardiac bypass and will adjust to it.

- You may feel despondent, depressed, irritable, have poor memory and find you cry for no reason. Problems with concentration, bad dreams and insomnia are commonplace after cardiac surgery but in time negative feelings will be replaced with more positive ones, as you adapt to the bypass and deal with its implications.
- Your physical abilities are not what they used to be before the procedure. Your body and mind need time to recover. Fight depression with a positive attitude towards rehabilitation. Stay constructively busy and do the things you enjoy. Do not sit around doing nothing, this can lead to negative thinking and feelings.
- If a counsellor did not visit you during your hospital stay and you would like to see one, phone the hospital for contact details.

WILL I NEED MEDICATION TO TAKE HOME?

Your doctor will prescribe any medication you need after discharge. Use this journal to list the medications provided and make notes on their use.

LIST OF MEDICATIONS	
MEDICATION:	I USE IT FOR:

HOW DO I MAKE ARRANGEMENTS FOR PAYMENT OF MY ACCOUNT?

The hospital account does not include all the treatments and services you may have received. Consultants in private practice will send you their accounts independently. Billing can be expected from the following service providers:

- Cardiologist
- Cardiothoracic surgeon
- Anaesthetist
- Physiotherapist
- Dietician
- Hospital
- Technician (perfusion technologist)
- Radiologist
- Pathologist
- Blood transfusion service
- Medical courier
- Any other doctor involved in your treatment

Contact the accounts department should you have any queries regarding billing and payment.

Source: Living a Full Life with Heart Disease, Pretoria Heart Hospital, Information booklet, 2004.

MY ECG ON ADMISSION

MEDICLINIC BLOEMFONTEIN CARDIAC UNIT

CARDIOTHORACIC SURGEONS:

Dr Joe Pretorius	Suite 109	T 051 444 5033
Dr Marius Swart	Suite 111	T 051 444 5033

CARDIOLOGISTS:

Dr Derick Aucamp	Mediclinic Suite 103	T 051 444 1315/6
Dr Braham Barnard	Mediclinic Suite 512	T 051 444 0692
Dr Wilhelm Herbst	Mediclinic Suite 409	T 051 444 0169
Dr Danie Marx	Mediclinic Suite 103	T 051 444 1315/6
Dr Ian Röscher	Mediclinic Suite 505	T 051 444 4313
Dr Gideon Visagie	Mediclinic Suite 103	T 051 444 1315/6

24-HOUR EMERGENCY NUMBER: T 0800 051 051

www.mediclinic.co.za

EXPERTISE YOU CAN TRUST.