



Preparing for Cardiac Surgery

Book 1 of 2



SOUTHLAKE
REGIONAL HEALTH CENTRE

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Dear Patients & Families,

Southlake Regional Health Centre is a progressive organization that is deeply committed to providing the highest level of personalized care to our cardiovascular patients. Now that you have learned that heart surgery is the best option for you, it is important to understand how best to prepare for your surgery and plan your recovery.

This booklet is designed to help you and your family understand your condition and what to expect before, during and after your heart operation. Please encourage all members of your family to read this information as they are key partners in your care. The days leading up to your surgery can be stressful. Therefore, it is important that you discuss your feelings with family members or friends.

Our cardiovascular team will work with you and your family to develop an individualized plan for your recovery, including heart healthy lifestyle changes.

Before you leave Southlake, you will receive a second booklet. This booklet will provide you with information about how to manage and accelerate your recovery at home.

Once you are discharged home, your recovery continues. You will be able to resume your normal activities over a period of 6-12 weeks following your hospital stay. You will also be referred to a Cardiac Rehabilitation Program, which is considered an essential part of your recovery.

On behalf of our Regional Cardiac Care Program and community and hospital volunteers, each patient will receive a hand-made, heart-shaped pillow. This pillow will serve an important function because it will provide support against your incision whenever you have to cough, but more than this, we hope this pillow provides you with comfort both while you are in the hospital and once you are discharged home.

If you have any questions or concerns, please contact your Regional Cardiac Care Coordinator at (905) 895-4521, ext. 2853.

We wish you a speedy recovery.

Sincerely,

Staff of the Cardiac Surgery Program

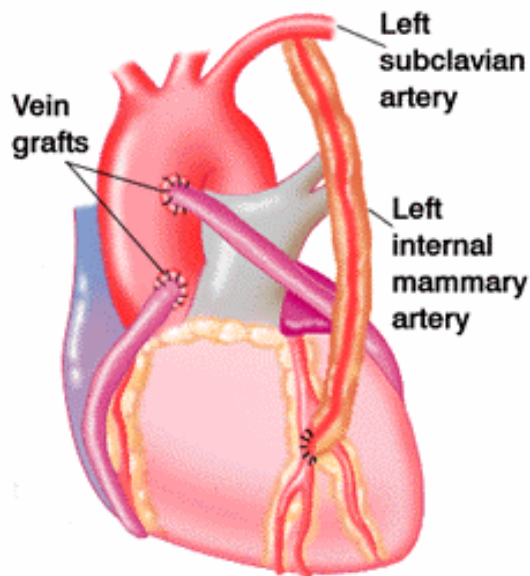
TYPES OF HEART SURGERY

Coronary Bypass Surgery

Coronary artery bypass grafting (CABG) surgery is necessary when medication and/or other procedures are not able to improve the blood flow to your heart. This is the most common type of heart surgery. Bypass surgery improves the blood flow of oxygen and nutrients to the heart muscle, which provides relief of angina symptoms and may increase your life expectancy.

During surgery, you will receive an anesthetic. You will be unconscious, pain-free and your condition will be monitored at every moment by an anesthesiologist. The surgeon will make an incision down the center of your sternum (breastbone), to get direct access to your heart. You will be connected to the heart-lung bypass machine, which takes over the function of your heart and lungs during surgery. The heart is stopped and the surgeon then performs the bypass procedure. A portion of a blood vessel from your leg (saphenous vein), arm (radial artery) or inner chest wall (internal thoracic artery) will be used to bridge the blocked or diseased area and improve blood flow to your heart muscle. The vein or artery will be attached to the aorta (large vessel that supplies blood to the heart) at one end and the other end will attach to the coronary artery below the area of blockage or disease. The diseased area is essentially “bypassed” and the coronary artery beyond the blockage receives the oxygen and nutrient-rich blood that is delivered to the heart muscle.

Example of a coronary artery bypass graft



After surgery, the surgeon will close the breastbone with stainless steel wires. Dissolvable sutures (stitches) or staples are then used to close the outer portion of your incision. The steel wires will remain in place and the sutures will dissolve over time.

Beating Heart Surgery

Beating heart surgery is a relatively new technique available for patients undergoing coronary bypass. Instead of using the heart-lung machine to support the patient's circulation during the surgery, the surgeons can use a different stabilizer that will enable them to perform the procedure without stopping the heart. Southlake's cardiac surgeons are fully trained to perform beating heart surgery. There are several types of coronary bypass procedures than can be done using the beating heart technique. We propose that you discuss this issue with your cardiac surgeon and see if you are a good candidate for this technique.

Heart Valve Surgery

Heart valves can be abnormally formed as birth defects or damaged by rheumatic fever, bacterial infection, and calcific degeneration. Valves can also degenerate with the normal aging process. Two common types of valve disease are:

Stenosis: This occurs when a valve opening becomes smaller or narrower and is unable to open wide enough to let blood easily flow through.

Regurgitation or Insufficiency: This occurs when a valve does not close completely and results in back flow of blood causing increased strain on your heart. To compensate for these disorders your heart pumps harder. There may also be decreased blood circulation to the rest of your body.

This excess work can weaken the heart, causing it to enlarge and produce the following symptoms of heart failure:

- Increased shortness of breath
- Chest pain
- Swelling of the ankles and legs
- Increased fatigue
- Dizziness
- Fainting

If medications are no longer able to control your symptoms, heart valve surgery may be recommended. Heart valves can be repaired or replaced. If they cannot be repaired, they are replaced with mechanical or tissue valves. The aortic and mitral valves are the most commonly affected. Your surgeon will discuss this with you and determine which procedure is best for you. Taken into consideration is your age, medical history, the nature of your heart disease, your lifestyle and your ability to take anticoagulants (medications that 'thin' or prevent your blood from clotting).

There are two main classifications of artificial valves:

Tissue/Biological valves are made from animals or humans (for example, the Hancock and Carpentier-Edwards valves) and are specially treated with chemicals to avoid rejection. Blood thinner (anticoagulation) medication is not usually necessary after the first three months following mitral valve surgery, and is not usually required after aortic valve surgery.

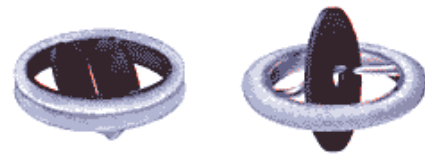
Mechanical valves are made of metal, carbon and/or synthetics (for example, the St. Jude valve). Lifelong blood thinner (anticoagulation) medication is required to prevent blood clots.

Some valves can be surgically repaired to help them open or close more efficiently. Two common surgical repair procedures are:

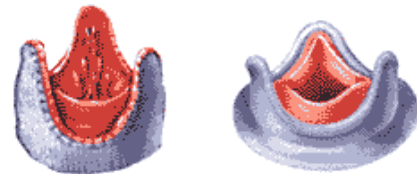
Ring Annuloplasty, which is a procedure in which the annulus, or ringlike part of the valve, is tightened by placing a ring of metal, cloth or tissue around the valve.

Valve Repair, which is a procedure to reconstruct the leaflets, chordae, and/or papillary muscles of the valve. A reinforcing ring is placed around the edge of the valve to help it maintain proper size and shape while correcting the flow of blood.

Mechanical Valves



Biological Valves



Atrial or Ventricular Septal Defect (ASD or VSD)

The 'septum' is the wall of the heart that divides the left and right chambers. Occasionally, areas in this wall fail to close during development before birth, leaving an opening called a septal defect. It can be in the heart's upper chambers, called an atrial septal defect (ASD) or in the lower chamber of the heart, called a ventricular septal defect (VSD). Sometimes, part of the ventricular septum may be damaged during a heart attack, causing a VSD. This opening may increase the workload on the heart; however, this can be surgically repaired. During surgery, the opening is sewn together or patched with synthetic material or tissue from around the heart.

Aneurysm Repair

After a heart attack, part of the heart muscle may become weakened or scarred. When this happens, a part of heart muscle may bulge (or balloon out) causing the heart to pump inefficiently. This may lead to symptoms of shortness of breath, pain or irregular heartbeats, as well as possibly aggravating already existing angina symptoms. At the time of surgery, the aneurysm may be removed or patched in conjunction with coronary artery bypass surgery.

PREPARING FOR SURGERY

Now that you have been accepted for cardiac surgery, you will be placed on a surgical waiting list. Waiting for cardiac surgery can be a very difficult time for patients and families; therefore, it is important that all of your questions are answered. It is completely normal to experience feelings of doubt or fear. The intent of this booklet is to provide you and your family with the necessary information that you need in order to be mentally and physically prepared for this process.

Southlake's 'PreHab' Program – Rehabilitation before Surgery

If you will be waiting at home for surgery, you may be referred to the PreHab program. The PreHab program will help you maintain your current level of activity while you await surgery. At PreHab, the staff will develop an individualized program that consists of exercise, education and support. You will also meet other patients who are waiting for surgery. Patients who maintain their level of activity seem to heal faster after surgery and some even go home a little earlier. PreHab runs two days a week, for 1-2 hours each day. The PreHab program is a component of the Cardiac Rehab program. Your cardiologist or surgeon will make the decision to refer you to PreHab. If you are referred, the PreHab staff will contact you by telephone.

Possibility of Cancellation

It can be very stressful for you and your family if your surgery date is changed. There is always a chance that your surgical date may have to be changed due to changes in your condition, or in the condition of others on the list. If your surgery date is changed, you will be notified as soon as possible by the Regional Cardiac Care Coordinator or your surgeon's office.

What if Your Condition Changes?

Your position on the waiting list for cardiac surgery is based on your current and ongoing medical condition. If there is a change in your condition while you are waiting for surgery, it is essential that you notify your physician and the Regional Cardiac Care Coordinator as this **may** affect your date of surgery. Contact your Surgeon at 905-868-8386 and/or the Regional Cardiac Care Coordinator for Cardiovascular Surgery at 905-895-4521 ext. 2853.

Changes such as the ones listed below require follow up:

Change in Condition	Follow Up
Chest pain that increases in frequency or severity can indicate a change in your angina.	Contact your Cardiologist. The cardiologist will contact the Regional Cardiac Care Coordinator.
Chest pain unrelieved with rest and nitroglycerine.	Go to your nearest Emergency Room or call 911.
Shortness of breath that is new, worse or occurring more frequently. Swelling in your feet or ankles that is new.	Contact your Cardiologist.
Fast or irregular heart beat that you have not had before.	Go to your nearest Emergency Room or call 911.
Cold, Fever or Infection Fever or productive cough may indicate infection.	Contact your Family Physician. Your physician will contact the Regional Cardiac Care Coordinator.

If you are seen in an Emergency department or admitted to hospital, please tell the staff you are on the waiting list for Cardiac Surgery at Southlake Regional Health Centre and call your surgeon's office.

PRE-OPERATIVE (PRE-OP) CLINIC

What to Expect at Your Pre-op Clinic Visit

Your surgeon's office will contact you regarding the date and time for your pre-op clinic and class two to three weeks before admission to hospital for your surgery. Family members are also encouraged to participate in this class as they play a key role in your recovery. The Regional Cardiac Care Coordinator will facilitate the pre-op class. Generally, this class is a one hour meeting where certain members of the cardiac team will be available to answer any questions you may have about your upcoming surgery.

A short video is shown which:

- a) briefly overviews what to expect before, during and after surgery;
- b) aspects of your recovery in hospital and at home;
- c) provides personal accounts and experiences of patients who have undergone heart surgery.

This class provides an excellent opportunity for you and your family members to ask any questions or express any concerns in a small group environment.

Who Will You See at Your Clinic Visit?

On the day you come in to attend the pre-op class, you will also have some pre-operative tests done in the clinic. The pre-op clinic is located on Level 1 of the East Building and you can plan on being in the clinic for approximately four to five hours.

The following consultations/tests are needed in order to plan your care before, during and after your surgery.

Anesthesiologist: During your pre-operative testing, you will meet a member of the anesthesiology team who will:

- review your medical history
- examine you
- talk to you about how to prepare for your anesthetic and surgery, what to expect in the operating room and what will happen after surgery in the Cardiovascular Intensive Care Unit (CVICU).

Physiotherapist: You will meet a member of the physiotherapy team who will teach you gentle arm, leg and breathing exercises that you will need to perform while in hospital. It is very important to practice these exercises before and after your surgery. The physiotherapist will outline your expected progression of activity while you are in hospital and review your current ability to walk (with or without a walker or cane).

Pharmacist: The pharmacist will meet with you to:

- Review your medications.
- Document your medication allergies or intolerances.
- Identify any medicines that should be stopped before your surgery and when to stop them.
- Identify specialty medications that you should bring with you the day of your surgery, which may include some types of inhalers, eye drops or lotions.

Please bring to your pre-op appointment all prescription and non-prescription medications that you use, in their original containers. This includes vitamins, herbals or homeopathic remedies.

Special Medication Instructions before Surgery:

If you take blood-thinning medications, the anesthesiologist will instruct you when to take the last dose.

Warfarin Last dose: _____

Aspirin (ASA) (& aspirin containing products) Last dose: _____

Other: _____ Last dose: _____

If you are diabetic and take pills and/or insulin, the anesthesiologist will instruct you when to stop these medications, or how to change the dose if needed.

Medication: _____ **Last dose:** _____

Other Medication Instructions:

Registered Nurse: During your pre-op visit, you will also be examined by an RN who will ensure that the following necessary tests are completed.

- Electrocardiogram (EKG) - a diagnostic test to measure the heart's electrical conduction system.
- Chest x-ray.
- Blood work and urine test.

Your doctor may also order a breathing test (pulmonary function test) to be done prior to your surgery. This will help to determine if there is any concern regarding the health of your lungs. The Respiratory Therapist will guide you through a series of tests asking you to breathe normally, or fast and hard. You will probably be given several puffs of medication, which will open up your airways. The test will then be repeated to see if there is any improvement in your breathing capacity.

PREPARING FOR THE DAY OF SURGERY

What If You Have to Wait in the Hospital?

If you are in a nearby Hospital awaiting surgery, you will be transferred to Southlake Regional Health Centre the day before your surgery. A nurse practitioner or physician will complete your history and physical when you arrive. Your surgeon and anesthesiologist will see you the night before your surgery. The nursing staff will provide you with Southlake's cardiac surgery education booklet as well as pre-operative teaching to prepare you for your surgery. Please be sure to ask any questions or discuss any concerns that you may have with your nurse.

Questions you have about your surgery:

Now that you have been scheduled for surgery, it is important that you take the time leading up to surgery to better ensure your successful and speedy recovery. These suggestions can help you feel better and heal faster.

Activity: It is important that you remain as active as possible before surgery; physical activity can help improve circulation and tone muscles. Limit your work and leisure activities to those that do not cause symptoms of angina (shortness of breath, chest pain, fatigue). If you have participated in Southlake's 'PreHab' program, continue to follow the activity guidelines received during your referral. PreHab is an important preparation program that can help you exercise in a safe and supervised environment before your surgery. It is important that you participate and follow the guidelines provided by the staff.

Smoking: If you smoke, quit. Smoking makes you more prone to developing pneumonia and lung pulmonary complications after surgery. It also makes your heart work harder, and accelerates the atherosclerotic process. You must quit smoking at least 3 weeks prior to surgery. If you need assistance with smoking cessation strategies, please contact the Cardiac Rehabilitation Program.

Medication: During your pre-op clinic visit, you will be instructed to stop taking aspirin or any medications containing aspirin, 7 days before your surgery. You will also be instructed when to take your last dose of blood-thinning (anticoagulant) medication. If you are unsure about the continuation of any medications you may be taking, check with a member of the health care team before you leave the pre-op clinic.

Heart Healthy Eating: Good nutrition is essential to good health and is especially important prior to your hospitalization for surgery. Eat a variety of healthy, low fat and low salt foods. Maintaining healthy eating habits may help with a quick recovery. If you have been following a therapeutic diet as part of your medical treatment, continue to do so and inform your physician (cardiologist and surgeon). If you are diabetic, ensure your blood sugars are well controlled to help promote healing and reduce complications after surgery. Contact your family doctor if you have concerns about your diabetic control.

Rest: Arrive at the hospital as rested and relaxed as possible.

Alcohol: Stop drinking alcohol – liquor, beer and wine – 2 days prior to surgery.

Fever or Cold: If you develop a fever or cold, contact your physician and the coordinator prior to coming to the hospital.

Escort: Plan to have someone accompany you to the hospital the morning of your surgery.

Contact Person: It is beneficial to designate one family member or friend to maintain communication with your surgeon and the healthcare team. This will enhance the flow of information and decrease the chance of miscommunication.

Before Surgery Checklist

You will be contacted by the surgeon's office a few days prior to surgery to confirm your surgical date and the time of your arrival at the hospital. Be sure that you understand where you will need to be and at what time.

- If you take medications in the morning, you may do so with a sip amount of water the day of your surgery (unless otherwise instructed).
- Please bring a list of all medications (including herbal/naturopathic medicines) you are currently taking and the dosage on the day of admission. Please be sure to bring in any medications as instructed by the pharmacist in your pre-op clinic visit.
- Do not eat solid foods after midnight the night before your surgery. You may have clear fluids such as black coffee, clear tea, apple juice, ginger ale and Jell-O, (NO milk, NO orange juice) up to 2 hours before your admission. After this time, no fluids are allowed, not even water. (NO gum, candies or mints).
- You will need to shower, as instructed, with the special soap provided before going to bed (2 nights before surgery, the night before surgery, and the morning of surgery). This soap helps reduce the amount of bacteria on your skin before surgery.
- Before going to bed and after brushing your teeth, you will need to rinse your mouth with the special mouthwash provided. The mouth rinse also helps to reduce the bacteria in your mouth before surgery.
- You may be asked to use a nasal ointment the night before surgery. This will help reduce the number of bacteria in your nasal passages.
- Do not shave any areas of your legs, chest or arms for 2 days before surgery. When you are admitted to hospital the morning of surgery, a member of the health care team will clip the necessary body hair in preparation for your surgery.
- A suppository will be provided and you will need to use this the night before surgery or in the morning before leaving for the hospital. The suppository will help clear your bowels before surgery.
- Try to get a good night's sleep before surgery. If necessary, your doctor may order a sleeping pill to help you relax and sleep.
- Make plans and preparations for your discharge from hospital (ride home from the Hospital, someone to stay with you the first few nights at home, family/ friends to assist you with household chores)
- Pack your bag for the hospital.

What You Should and Shouldn't Bring to the Hospital

The following is a list of suggestions to keep in mind when packing your bag for the hospital. If you are being admitted to hospital the same day of surgery, your family will need to bring in your packed bag.

Leave all your valuables at home : Remember to leave valuables such as rings, jewellery, watches, wallet, purse, cell phone, credit cards or large amounts of cash at home. Although Southlake makes every attempt to ensure a secure environment, there have been situations in every Hospital when items have gone missing or been misplaced. The safest place to leave your valuables is at home.

Bring comfortable clothing: Immediately after surgery you will probably want to wear the hospital gown provided. Gowns often become soiled due to the cleansing solutions or wound drainage; however, once you are transferred to the patient ward, you may prefer to wear your own pajamas (cotton, loose fitting, front opening pajamas) or robe. Please ensure that your robe opens all the way down the front and is NOT longer than knee length. This is important for your safety. Slippers, as well as proper walking shoes are important (sneakers are best). Both should have closed toe and heel areas and a rubber sole. Your feet may be swollen for a few days after surgery; therefore, it is most comfortable if shoes and slippers are adjustable or have laces. Women should bring a comfortable, loose fitting brassiere or sports bra.

Bring in your own pillow and pillowcase: Sleep deprivation is one of the most common problems that patients have to deal with after surgery. Sometimes the smallest comforts from home can make a difference in how well you progress in hospital; therefore, you may wish to have your own pillow with you.

Bring your own toiletries: Be sure to pack these items for your own personal comfort:

Toothbrush, toothpaste

Hairbrush or comb

Deodorant

Razor and shave cream

Unscented moisture cream

Please do not bring any scented or perfumed products to the hospital

Be sure to bring containers marked with your name for any prosthetics such as dentures, hearing aids, contact lenses or corrective glasses. You will be asked to remove any prostheses before you are taken into the operating room, so it is important that these are well marked to ensure safe keeping and return to you. Please do not wear nailpolish, perfume, makeup or deodorant on the day of surgery.

Fight Boredom: Once you are transferred to the cardiovascular surgery inpatient unit, you may find the days and nights tend to be extremely long. It is completely normal for your attention span to be short or to have difficulty concentrating. In order to pass the time and fight the boredom, consider bringing the following items:

- Magazines or books with lots of pictures
- Crossword puzzles
- Playing cards for solitaire
- Small amounts of cash for lifesavers or gum from the giftshop

Leave Work at Work: It is best to leave any personal or professional work at home. At this point, it is important that you focus all of your energy on your health and recovery.

THE DAY OF YOUR SURGERY

When You Arrive at the Hospital

When you arrive at the hospital the morning of your surgery, go directly to Level 4 of the West Building. Be sure to arrive on time and please bring your health card. You can expect to be in the cardiovascular surgery inpatient unit until you go to the operating room.

You will be asked to shower with an antiseptic soap the morning of surgery and to put on a hospital gown. You will be asked to remove all clothing (including underwear), makeup, nail polish, jewelry, hair pieces and hair pins, prostheses such as dentures, hearing aids, eyeglasses and contact lenses.

Frequently asked questions and answers

Here are some of the questions most frequently asked by patients at this stage of their hospitalization:

Q: How long will the operation take?

A: The operation itself usually takes 3 to 5 hours, but preparation for surgery, administration of anesthesia, and preparation for the transfer to the CVICU extends the time in the operating room to 4 to 6 hours. In the operating room, time is required to insert intravenous lines and set up other equipment to monitor body functions and keep them functioning smoothly during surgery.

Q: How will my family know when the surgery is completed?

A: While the operation is in progress, your family can wait in the hospital waiting room or leave a telephone number where they can be reached. When the surgery is completed your surgeon will contact your family and inform them of your condition.

Q: Where will I be when I wake up?

A: Following surgery you will be brought to the CVICU, where you will remain for approximately 12 to 48 hours. After that, you will be moved to a regular bed on the cardiovascular inpatient unit.

Q: When will I be able to see my family?

A: Once you have been moved to the CVICU for recovery after surgery and comfortably settled, your family will be allowed in for a brief visit. The CVICU is located in Northeast Infill Building, Level 2.

Q: What are the visiting hours?

A: Standard hospital visiting hours are from 2:00 p.m. - 8:30 p.m. It is recommended that you limit the number of visitors while in hospital. It is important that you focus your energy on your recovery.

Q: How should my family communicate with the health care team?

A: It is beneficial to designate one family member or friend to maintain communication with your surgeon and the healthcare team. This will enhance the flow of information and decrease the chance for miscommunication.

Q: What can my family expect when they first see me in the CVICU?

A: Your family will be able to visit once you are settled in the CVICU. You will appear pale, cool to touch, your face and arms will look swollen and you may still be asleep. The swelling is normal after surgery and is a result of the fluid that is added to your body during surgery. They will also notice special monitoring equipment surrounding your bed. This is normal in the early recovery period; your family can expect to see an improvement within hours following the surgery.

Visitors

All visitors need to call the CVICU from the waiting room before visiting. Visitors may come two at a time and are limited to immediate family and significant others only while you are in the CVICU. A family spokesperson should be appointed in advance to make phone calls to the CVICU to check on your condition. This is the only person who may call the unit. This will help prevent disruptions in your care.

MEET YOUR HEALTHCARE TEAM

Your healthcare team includes a highly trained, highly skilled group of professionals who specialize in cardiac surgical care as well as a group of support professionals. Together, this team strives to provide you with exceptional, holistic care.

YOUR SURGERY

What to expect in the Operating Room (OR)

Here are some general things to expect once you enter the operating room:

- The operating room will be cold and have many bright lights, machines and instruments.
- The operating room team consists of your surgeon, 2 nurses, 2 anesthesiologists, 1 respiratory therapist, 1 perfusionist and 1 surgical assistant.
- Intravenous Lines (IVs) are small tubes that are inserted in veins in your arms for medications, fluid replacement and blood pressure monitoring. After the first IV is inserted, the anesthesiologist may administer some medication to help you feel relaxed and drowsy. The anesthesiologist will ask you to breathe into a lightweight mask and give you medication through your IV so that you sleep during surgery.
- Other lines and monitoring devices will be inserted in the operating room after you are asleep.

What to Expect When You Wake Up (CVICU)

You will wake up in the CVICU after your surgery is complete. When you first awaken from the anesthetic, don't be alarmed if you experience a certain amount of disorientation and discomfort. For a brief period of time your arms or legs may feel numb, or you may feel some confusion and anxiety. These effects of anesthesia should be short lived. A registered nurse will be on hand to continuously monitor and assist you as you awake from surgery.

While your body is at rest during surgery, several pieces of medical equipment do much of the body's work for you. Upon waking, you will also notice that you are still connected to the medical equipment to which you were attached during your operation. These tubes and wires may seem awkward and uncomfortable, but it is important for you to know that they are used routinely in heart surgery. You should be able to move around in bed with the assistance of a nurse even though you are still connected to these machines.

Breathing Tube: You will have a breathing tube in your windpipe to assist your breathing while you are asleep. You will be unable to speak, eat or drink until the tube is removed. You will slowly begin to wake from your surgery and the breathing tube will soon be removed when you are strong enough to breathe on your own. Your nurse and the respiratory therapist will assess your strength to breathe on your own. After the tube is removed you may find that for the next few hours your throat is sore and your voice may sound hoarse. After your breathing tube is removed, you will have a mask placed on your face giving you oxygen. The respiratory therapist will come around periodically to assess your need for oxygen and make appropriate adjustments.

Chest Tubes: You will have 1-4 chest tubes that are placed just below your incision and wrapped in the dressing that covers this area. These tubes help to drain extra fluid from the surgical area. Your chest tubes will remain in place for 1-2 days after surgery and will be removed when the amount of drainage slows or stops.

Incisions: You will have an incision on your chest, and depending on the type of surgery, you may also have an incision on your arm(s) or leg(s). The dressings over these incisions will be changed within 48 hours and then daily.

Heart Monitor: You will be attached to a bedside heart monitor by electrodes that continuously monitor your heart rate and rhythm.

Pacemaker Wires: After surgery, your heart may need temporary electrical stimulation to help it beat while your heart tissue is healing. Temporary pacemaker wires are inserted under your skin during surgery and can be attached to a small pacemaker box if required. Pacemaker wires will be removed before you go home.

Foley Catheter: A foley catheter drains the urine from the bladder and is usually removed the second day after surgery. Please be aware that there are often significant weight shifts around the time of surgery. All patients are given fluid during surgery so you will gain fluid weight before and during the operation, and lose it afterwards.

Lines: The intravenous (IV) lines and arterial line(s) will remain in place until the team decides that it is time to remove these (based on your progress). The lines in your neck and wrist will be removed before you leave CVICU. The remaining intravenous lines remain in place after you are transferred to the patient care unit.

Breathing and Coughing Exercises

Breathing exercises and getting up out of bed are important parts of your recovery. Although you may be tired, following the exercises and activities outlined by the physiotherapist can help to prevent complications such as blood clots in the legs and pneumonia.

What you can do to help yourself

You should start your breathing and ankle exercises as soon as you wake up from surgery. Don't wait for your physiotherapist to get started. Your nurse and physiotherapist will work together to assist you with your exercises.

Breathing exercises: Do a breathing exercise every hour while you are awake. Try to aim for 10 repetitions each time.

Diaphragmatic breathing

Sit or lie comfortably with your shoulders relaxed.

Place your hands on your belly.

Take a breath in through your nose.

You should be feeling your belly rise under your hands. (Your belly should be rising MORE than your ribs do at the top of your chest.).

Breathe out through your mouth and feel your belly relax under your hands.

Lateral costal breathing

Sit or lie comfortably with your shoulders relaxed.

Place your hands on the sides of your rib cage (above your waist)

Breathe in through your nose and feel your rib cage move out.

Breathe out through your mouth and feel your rib cage relax

Coughing: After you have completed 4 - 5 repetitions of one breathing exercise, it is important to cough to get rid of any mucus that may have loosened up in your lungs. Hold a pillow or blanket firmly against your incision. Take a large breath in and cough strongly 2 or 3 times. Spit out any mucus that may bring up. **Repeat the breathing exercise and coughing again.**

Other Exercises: Exercises are best performed sitting in a firm chair unless otherwise instructed. Please ensure that you continue to breathe while performing these exercises. **DO NOT** hold your breath.

Neck Rotation

Slowly turn your head to the right, then back to the middle. Repeat 5 times. Repeat exercise turning to the left.

Shoulder rolls

Lift both shoulders up, then roll them forward, then down, then back. Repeat 10 times. Repeat in opposite direction.

Shoulder Flexion

Raise one arm forward and up until your arm is next to your ear. Slowly lower. Repeat 5 times. Repeat with opposite arm. If you are able, you can progress to lift both arms at the same time.

Trunk Rotation

Keeping your hips and buttocks still, turn your upper body to the right and reach for the left side of the chair. Hold a few seconds and relax. Do five repetitions. Repeat to the left.

Marching on Spot in Seated Position

Lift one knee up, then lower down. Switch legs. Do 10 times each leg.

Knee Extension in Sitting

Straighten one leg by lifting your heel up off the floor. Keep thighs parallel. Hold five seconds. Repeat 5 times each leg.

Ankle Pumping

Point and flex your ankles slowly through their full movement. Do 10 times. Now make circles with your ankle and foot. Do 10 times.

Posture/Thoracic Extension against wall

Stand against a wall. Keep your buttocks, shoulder blades and head against the wall. Do not tip your head back – keep looking straight ahead. Continue breathing in and out while maintaining this position for 20 seconds. Repeat.

ACTIVITY GUIDELINES AFTER HEART SURGERY

Each STEP reflects your progress following your surgery; many patients accomplish these steps within 4 to 5 days. Listen to what your body is telling you. Your physiotherapist will help you develop a plan that will work for you.

Name: _____

	ACTIVITY	COMMENTS	Date completed	Physio/RN Signature
Step #1	<ul style="list-style-type: none"> • Sit on the side of the bed • Ankle circles every hour • Deep breathing exercises with supported coughing every hour 			
Step #2	<ul style="list-style-type: none"> • Sit in a chair 15 minutes 2X per day • Short walks in room with assistance • Continue breathing exercises hourly • Arm and leg exercises 5 – 10 reps, every few hours 			
Step #3	<ul style="list-style-type: none"> • Short walks with assistance of walker as able in the room, to the bathroom and in the hall as tolerated • Continue arm, leg and breathing exercises • Sit in chair as tolerated 			
Step #4	<ul style="list-style-type: none"> • Up walking every few hours. Walk in hall at slow, relaxed pace with supervision. 			
Step #5	<ul style="list-style-type: none"> • Progress walking distance as tolerated • Stairs as tolerated 			

Care on the Inpatient Unit – what to expect for your first five post-operative days

You can expect to be in the CVICU for 12-48 hours after your surgery. When ready, you will be transferred to the cardiovascular surgery inpatient unit. You will hear the health care team refer to your recovery time in terms of how many days you are ‘post-op’ or ‘after surgery’. The day following your surgery is considered post-op day number 1, then 2, and so on. The healthcare team will continue to closely monitor your progress daily and will work together to ensure your individual needs are met. The following table provides you with a ‘typical’ experience or guide for what to expect daily in the recovery process. Please keep in mind that every patient recovers at his or her own pace, so some patients may not follow this guide exactly to the day.

Post op Day 1	<ul style="list-style-type: none"> • Blood work, ECG & chest x-ray (CXR) will be done. • If you had valve surgery, blood work (INR) will be monitored daily in order to adjust your blood thinner medication. • Start taking sips of water as tolerated • You will be instructed to turn regularly every 2 hours and complete arm and leg exercises. • When the team feels you are ready, you will be transferred to the inpatient unit. • Request your pain medication regularly. • Portable heart monitor will be worn at all times.
Post op Day 2	<ul style="list-style-type: none"> • Weight daily before breakfast. • Request your pain medication regularly. • Diet will be progressed to a heart healthy diet (solid food) if your stomach can tolerate it. • You will sit up in a chair for all meals. • Foley catheter and other lines (IV) may be removed. • If your blood sugar (BS) is elevated after surgery, you may require IV insulin (temporarily, this will be changed to either your previous medications or stopped once you are eating better.) • Dressings over your incisions will be changed today (if there is no drainage, the incisions will not be covered). • Chest tubes will be removed if still in place (if drainage is minimal). • Oxygen nasal prongs will be worn until your oxygen levels are high enough that supplemental oxygen is not needed. • You will wash yourself at the sink (with assist), brush your teeth, comb your hair. • Continue your arm, leg, and breathing exercises (as outlined on the flowsheet). • Stool softeners will be given daily. It is important that you avoid straining while having a bowel movement. • Discuss tentative date of discharge with staff.

Post op Day 3	<ul style="list-style-type: none"> • Weight daily before breakfast. • Request your pain medication regularly. • Routine blood work & CXR will be done. • Continue a heart healthy diet. • Continue to increase your activity & the distance that you walk in the halls (as per the activity flow sheet). • You may shower today or tomorrow with the assistance of staff. • Discuss progress & discharge plans with staff.
Post op Day 4	<ul style="list-style-type: none"> • Weight daily before breakfast. • Request your pain medication regularly. • If your bowels have not yet moved, you may want to request another medication for constipation. • You may shower today with the assistance of staff. • Continue to increase your activity daily. • Pacemaker wires will be removed today. • Discuss progress & discharge plans with staff. • Make plans for a ride home from hospital tomorrow.
Post op Day 5	<p>If you are being discharged today, you will:</p> <ul style="list-style-type: none"> • Be weighed in the morning before breakfast. • Be able to get in and out of bed on your own. • Be able to walk in the hall on your own and walk a flight of stairs without assistance (if you have stairs at home). • Have had a bowel movement. • Be eating a heart healthy diet without much difficulty. • Have stable heart rate, blood pressure and temperature readings. • Be comfortable with your current pain management plan.

If, for some reason, you are not discharged on post op day 5, you will be encouraged daily to carry on with your exercise program, continue to eat healthy, and try to rest as much as possible. Prior to discharge, you will receive a physiotherapy walking program, prescriptions for any medication you will have to take at home, a discharge plan regarding rehabilitation or home care (if necessary) and discharge instructions.

PREPARING FOR DISCHARGE

You can expect to be in Hospital for 4-7 days (including CVICU stay). Discharge planning needs to start before you come to the Hospital. This ensures that your needs are assessed and plans are put in place, if necessary. The health care team has followed your progress since your surgery and you are now ready to be sent home from Hospital. It is extremely important that you make plans for your discharge before coming to the Hospital for surgery. You will need to arrange transportation from the Hospital to your home prior to your day of discharge. By the time you are discharged you will be able to walk short distances, climb a flight of stair, shower with no supervision and prepare light meals. It is important that you have someone at home to assist you in the first few days after you return from the Hospital. You will need assistance with household chores such as laundry, cooking, cleaning and grocery shopping. Your companion should not be afraid to leave you alone for periods of time. If you live alone, have special needs, or do not have a companion or family member to attend closely to you for a few days after you return home, please notify the staff and ask to see a social worker. Feel free to ask questions regarding your care or planned discharge. Nursing care is rarely needed after you are discharged from hospital. If it is required, this will be arranged prior to your discharge.

Medication

Your medications following surgery will probably be different than they were before surgery. Medication that was previously prescribed to prevent angina is not needed after surgery. Your pharmacist or nurse will provide you with a detailed medication list, which will outline any new medications, medications that are to continue and those that are to be stopped. They will review this with you and provide an opportunity for you to ask any questions about your new medications, especially blood thinners. Always follow the instruction on the label. Be sure that you know the name of your medications and understand the purpose, dose, effects and how long you will need to take them. Remember, non-prescription pain, cough and cold medications, antacids, vitamins, minerals and herbal or homeopathic remedies may affect your other medications. Always check with your doctor or pharmacist before taking other medicines. Our pharmacist will also work with your community pharmacist to assist in a smooth transition from hospital to home. Before you leave the hospital, you will be given a prescription for your discharge medications.

Heart Valve Surgery - patient follow up

Some patients will require anticoagulants or “blood thinners” to prevent the formation of blood clots around the mechanical valves or within the heart. A certain level of blood thinness is required. The amount of medication you take to thin your blood will depend on the result of a regular blood test call an INR level.

The INR level shows how long it takes for your blood to clot. If your dose is insufficient, the INR level will be low and the drug will be ineffective. If your dose is excessive, the INR level will be too high and excessive bleeding may result. There is an optimum dose of medication for every patient and for every patient the dose is different.

When taking this medication, remember to watch for excessive bleeding, excessive bruising, bowel movements that are bloody, black or tarry, urine that is pink or red, brown or red vomit and severe headaches or abdominal pain. If you have any of these symptoms call your family doctor immediately.

Take your blood thinner exactly as prescribed by your doctor. Do not double up on a dose if you forget to take it. Certain medications may increase or decrease the effect of your blood thinners, so check with your pharmacist whenever you wish to use non-prescription products. Your pharmacist will advise you as to which products are okay to use. Also make sure other health care professionals (dentist, surgeon) know that you are taking anticoagulants. It is strongly recommended that if you are on blood thinners for a long period of time that you obtain a medical alert bracelet through your local pharmacy.

It is important for patients who have had valve surgery to protect their new valves from bacteria. Bacteria can enter the blood during dental work and major or minor surgery. Antibiotics must be prescribed by your doctor before and after these procedures. This will decrease the risk of an infection that may affect your heart valve.

Signs of infection can result in a general feeling of fatigue and/or feeling unwell which does not go away. Other signs include: fever, chills and sweating. Arrange to see your doctor right away if you develop any of these symptoms.

Be sure to tell any doctor, dentist or other health care professionals that you have had a valve replacement before any dental, surgical or invasive procedure (such as rectal or bladder exams) so that antibiotics can be ordered to prevent an infection.

Travelling Home by Car

If you have a long distance to travel home, stop for a short walk or to stretch your legs every 1-2 hours. Try to have enough room in the car to be able to sit and rest comfortably. It is important that you request pain medication before you leave the hospital so you are comfortable for the ride home.

Air Travel

It is recommended that you consult with your surgeon before making any air travel plans after heart surgery.

Heart Healthy Diet

Once you are eating well again after surgery, it is important to resume or start heart healthy eating. If you have had bypass surgery, lowering your fat intake can help lower blood cholesterol levels and prevent accumulation of plaque in your new bypass graft arteries. If you have had heart valve surgery, heart healthy eating can prevent coronary artery disease. You will receive handouts on heart healthy eating guidelines in hospital to help you make healthy changes to your eating habits.

Cardiac Rehabilitation

Caring for you and your heart continues after you are discharged from the hospital. One of the next steps of your recovery is participation in a cardiac rehabilitation program. You will likely be referred to this program when you are discharged from the hospital. The professional staff at cardiac rehab will assist you in supervised exercise, provide classes about your heart, risk factors, healthy eating, and stress management in a supportive atmosphere. Each participant is assessed and an individualized exercise prescription is developed according to their needs and abilities. You will learn more about this program while you are in hospital. If you live a distance away from Newmarket, we will let you know about cardiac rehab programs closer to your home.

Follow up Appointments

Upon discharge, you will be given instructions regarding your follow up appointments. You will need to arrange follow up appointments with:

Your family doctor one week after discharge.

Date: _____

Time: _____

Your cardiologist 4-6 weeks after discharge.

Date: _____

Time: _____

Your surgeon 8-12 weeks after discharge.

Date: _____

Time: _____

Hospital Directory

Southlake Regional Health Centre: (905) 895-4521

Dr. B. Moon	Ext. 2888
Dr. C. Peniston	Ext. 2888
Dr. R. Bauset	Ext. 2888
Regional Cardiac Care Coordinator	Ext. 2853
Cardiovascular Intensive Care Unit (CVICU)	Ext. 2878
Cardiovascular Surgery Inpatient Unit	Ext. 2892

Cardiologist: _____

Cardiac Surgeon: _____

Community Resources

Community Care Access Services (CCAC)/Homecare:	(905) 895-1240
Heart & Stroke Foundation of Canada:	(905) 853-6355
Cardiac Rehabilitation Program (including PreHab): • Smoking Cessation Program	(905) 895-4521 Ext. 2798

Reading Resources

Heartmates: A survival guide for the cardiac spouse. (1997). So you're having heart bypass surgery: What happens next? Minerva Press.

Colella, T., Turner, S. & Goldman, B. (2003). So you're having heart bypass surgery: What happens next? Script Medical Press: TO

OTHER INFORMATION YOU MAY NEED

Accommodations within 15 minutes to Southlake Regional Health Centre

Best Western Voyager Place Hotel

17565 Yonge Street
Newmarket, ON L3Y 5H6 905-895-2131

Weekday standard room (hospital) rate: \$ 89.99 (interior tower)
(hospital) rate: \$ 79.00 (exterior tower)

Comfort Inn

1230 Journey's End Circle
Newmarket, ON L3Y 5H6 905-895-3355

Standard room rate (corporate rate) \$87.49 - 129.00

Howard Johnson

15520 Yonge Street
Aurora, ON L4G 1P2 905-727-1312

Standard room rate (corporate rate) \$98.10 (weekday)
\$116.00 (weekend)

Newmarket Inn

18667 Yonge Street
Newmarket, ON L3Y 4V8 905-895-4585

Standard room rate: \$75.00 (June - October)
\$65.00 (October - May)

Hunter's Creek Bed & Breakfast

2150 Hwy. # 9
Newmarket, ON L3Y 4V9 905-853-4205

Standard room rate: \$ 75.00

** Accommodation prices are subject to change**

We would like to thank the following individuals for contributing their time and expertise to the creation of our cardiac surgery patient education booklets.

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Dr. Charlie Peniston – Cardiac Surgeon
Bryan Pick – Pharmacist
Karen Robbins – Respiratory Therapist
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Mary Ryan – Manager, Community Resources
Dr. Mike Sullivan – Anesthesiologist
Kaylyn Ward – Physiotherapist
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