



# Cardiac Surgery Patient Guide

You must **BRING** this book with you to the hospital.

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## **Introduction**

- This guide is for patients (and families) undergoing cardiac surgery.
- It is designed to help you understand the surgery, the recovery, the rehabilitation and the important role you play in your recovery.
- Cardiac surgery offers you a treatment, **not a cure**, for your heart condition.
- This booklet is intended to be generic and apply to the majority. Depending on your surgery, some of the information may not apply to you.
- This information **does not** replace medical advice. You are encouraged to speak with your doctor about your specific condition.
- If you have questions that are not answered in this book, please write them down, and direct these questions to your Doctor, Nurse or any member of your health care team.

## **Recommended Websites for Additional Information**

### **The Society of Thoracic Surgeons**

<http://ctsurgerypatients.org/adult-heart-disease/aortic-valve-disease>

**Hearthub.ca** (for patients//by patients)

### **The Heart and Stroke Foundation**

<http://www.heartandstroke.com>

**Vancouver General Hospital is a Scent Free Zone**

Many staff and patients have allergies to scented toiletries and perfumes.

Do not wear these products in the hospital

# Anatomy of The Heart

- The heart is the organ responsible for pumping blood through the lungs and to the rest of the body.

It is located in the chest cavity behind the breastbone, also known as the sternum.

The heart is the size of your fist and is divided into four chambers named the:

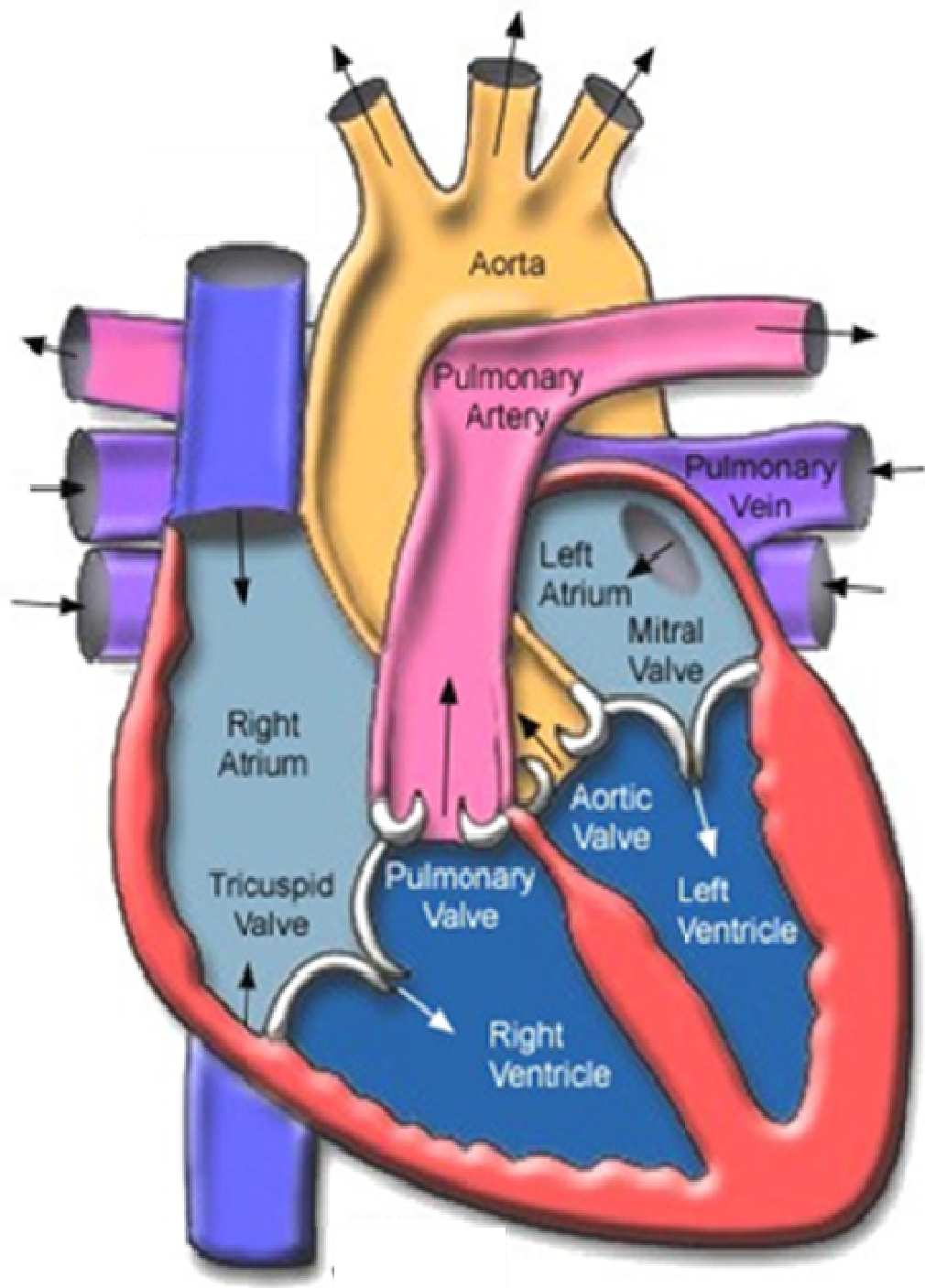
1. Right Atrium
  2. Right Ventricle
  3. Left Atrium
  4. Left Ventricle
- The Right Atrium receives blood without oxygen (unoxygenated blood) from the body. The blood in the Right Atrium is pumped into the Right Ventricle, which then pumps the blood to the lungs.

In the lungs, carbon dioxide (waste in the blood) is removed and new oxygen is added. The blood then flows into the Left Atrium which then pumps the blood with oxygen (oxygenated blood) into the left ventricle. The Left Ventricle pumps blood out to the rest of your body.

- Blood flows in one direction through the heart due to valves located between the chambers of the heart.

There are four heart valves named the

1. Mitral Valve
  2. Tricuspid Valve
  3. Aortic Valve
  4. Pulmonary valve
- The valves open when blood is pumped forward out of the heart chambers and then close to prevent blood from flowing backwards.
  - When a heart valve becomes diseased (not working properly), the valve may not open or close as it should and the heart has to work harder to pump blood out to the rest of the body.



# Cardiac Risk Factors

- Risk factors are personal characteristics (e.g. age, family history) or lifestyle choices (e.g. smoking, diet) that place you at risk for developing heart disease.

Some people with heart disease may have several risk factors while others may have one.

Research has shown, that even after developing heart disease, reducing your risk factors has benefits.

- Risk factors are classified as Non-Modifiable (those you cannot change) and Modifiable (those you can change).

## Non-Modifiable Risk Factors

- Age
- Gender (Sex)
- Ethnicity
- Family history with early heart disease

## Modifiable Risk Factors

- Diabetes (no cure, yet can manage diabetes)
- High Blood Pressure (Hypertension)
- Physical Inactivity
- Overweight and Obesity
- Diet high in fat, salt and calories
- High Cholesterol
- Smoking

It is important to reduce your risk factors but be realistic. Changing one or two things at a time is probably easier to do.

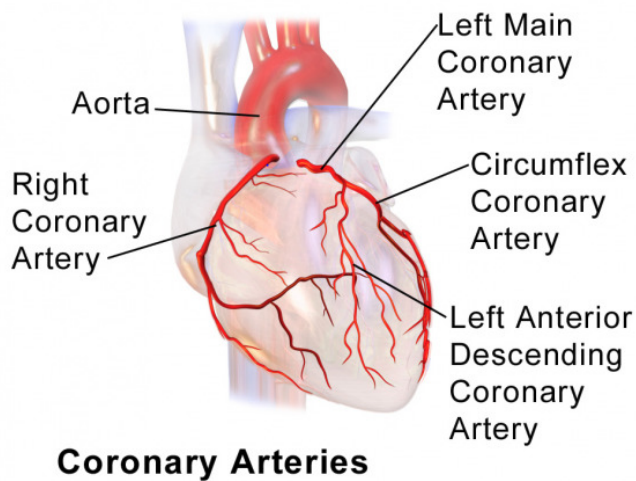
**Following cardiac surgery, lifestyle changes are necessary to reducing risk factors and can minimize blockages in your newly grafted arteries, slow progression of blockages in your own arteries, and reduce damage to valves.**

**Ask your doctor or health care professionals for advice about reducing your risk factors.**

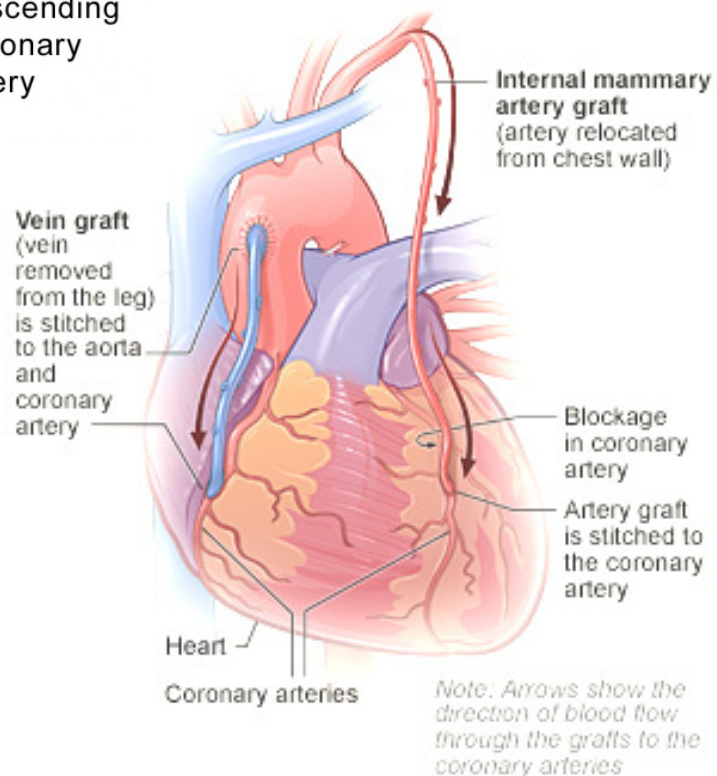


# Coronary Artery Bypass Surgery

- As coronary artery disease progresses, the blood flow within the coronary arteries is decreased due to blockages, this can lead to areas of the heart not getting enough blood supply and oxygen.
- Blood vessels taken from the arm (radial artery), leg (saphenous vein) and chest (internal mammary arteries) can be used as grafts to bypass (go around) the blockages.
- The blood uses the grafts as detours (bypasses) to reach the areas of the heart beyond the blockages and deliver blood and oxygen.
- This improves blood flow and oxygen within the coronary arteries, resulting in relief of angina symptoms and improving quality of life.



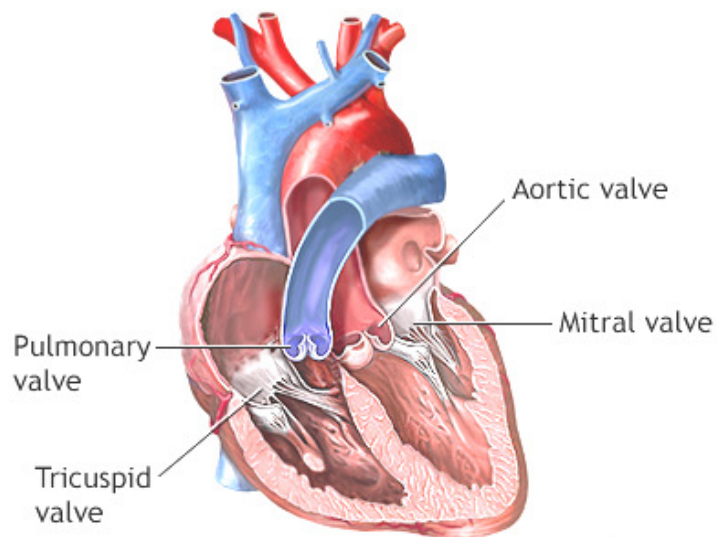
<http://csurgerypatients.org/adult-heart-disease/coronary-artery-disease>



<http://csurevpatients.org/adult-heart-disease/coronary-artery-disease>

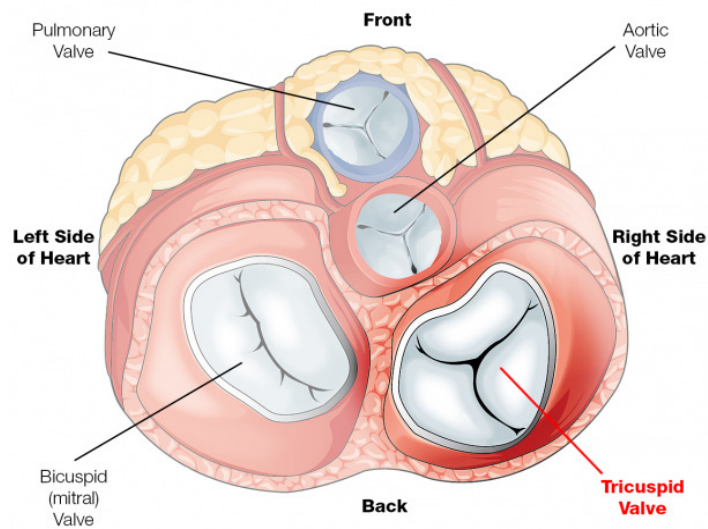
# Valve Surgery

- When heart valves do not open or close properly, blood does not always flow forward or inadequate amounts between the chambers of the heart.
- Depending on the degree of valve disease, your surgeon will either repair or replace the valve.
- Replacement can be done with a tissue or a mechanical valve. Your surgeon will discuss the options with you.



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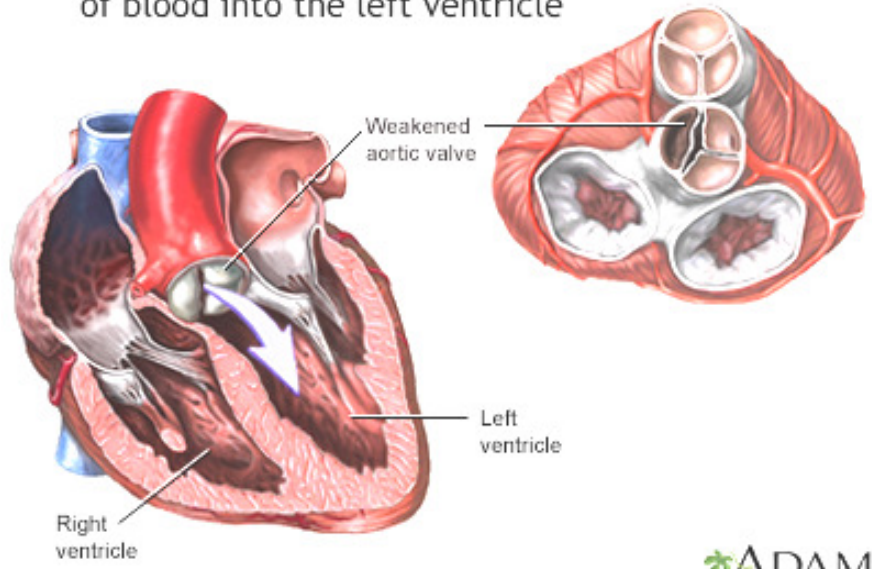
<https://www.nlm.nih.gov/medlineplus/ency/imagepages/9380.htm>



<http://itsurgerypatients.org/adult-heart-disease/aortic-valve-disease>

**Aortic Regurgitation:**

Failure of the aortic valve to close tightly causes back flow of blood into the left ventricle

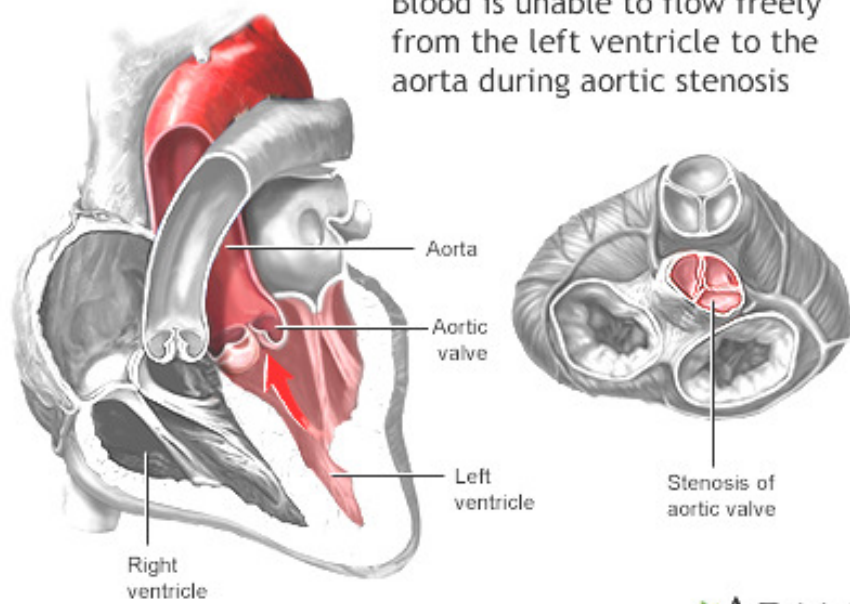


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<https://www.nlm.nih.gov/medlineplus/ency/article/000179.htm>

**Aortic Stenosis:**

Blood is unable to flow freely from the left ventricle to the aorta during aortic stenosis



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<https://www.nlm.nih.gov/medlineplus/ency/article/000178.h>

## Minimally- Invasive Surgery (MIS)

- Some patients are candidates for minimally-invasive surgery.
- These surgeries are done without a midline sternotomy (the breastbone is not cut).
- The surgery is done through a small, 5-6 cm incision between the ribs, called a **mini-thoracotomy**.
- If a robotically-assisted **coronary bypass graft (CABG)** is done, the mini-thoracotomy incision is done on the **left side** of the patient's chest.
- If a minimally-invasive **mitral or tricuspid valve** surgery is done, the mini-thoracotomy incision is done on the **right side** of the patient's chest.
- If a closure of an **atrial septal defect (ASD)** is done, the mini-thoracotomy incision is also done on the **right side** of the patient's chest.
- To reduce post-operative pain, you **may** have an **epidural**, a small catheter (tube) that is inserted into the epidural space near your spine. This is done just before the surgery, by the anesthesiologist (the doctor who puts you to sleep for the surgery).

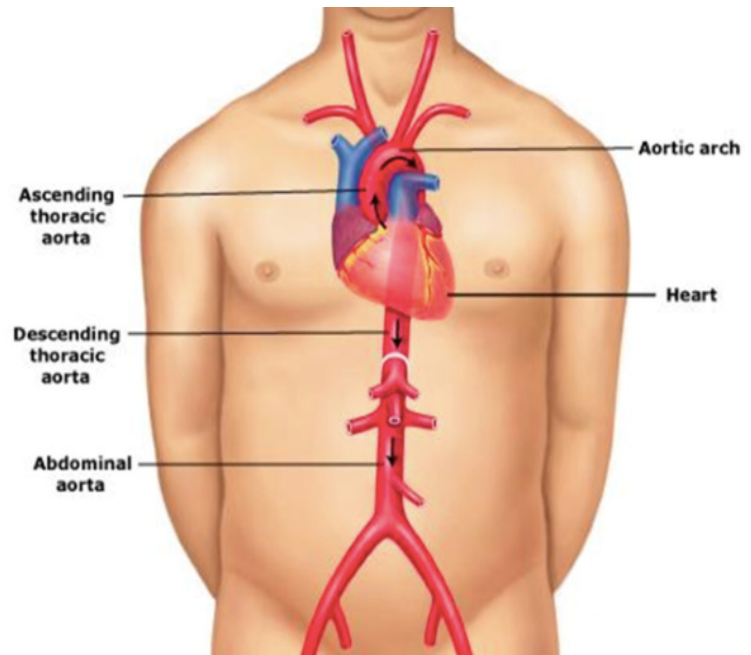
The epidural controls pain by blocking nerve responses to pain in the spinal cord.

The epidural can provide anesthesia (pain control) to either the patient's left or right side, depending on where the surgical incision is made.

- Recovery following minimally-invasive surgery is usually quite different than it is for patients who have a sternotomy. This will be discussed under post-operative care (page 38).

## Aortic Anatomy and Aortic Disease

- The aorta is the largest artery in the body. The heart pumps oxygenated blood through the aorta to deliver oxygen and nutrients to all the organs and tissues.
- The ascending aorta, aortic arch and descending aorta make up the thoracic aorta found in your chest.



Aortic Root Aneurysm



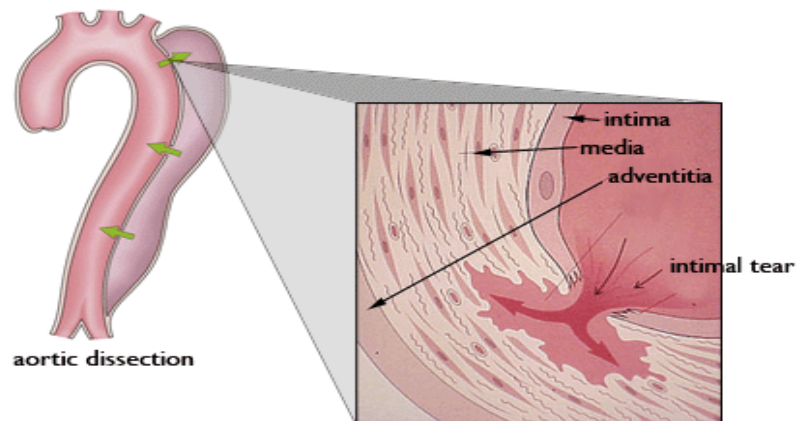
Ascending Aortic Aneurysm



Aortic Arch Aneurysm



Descending Aortic Aneurysm



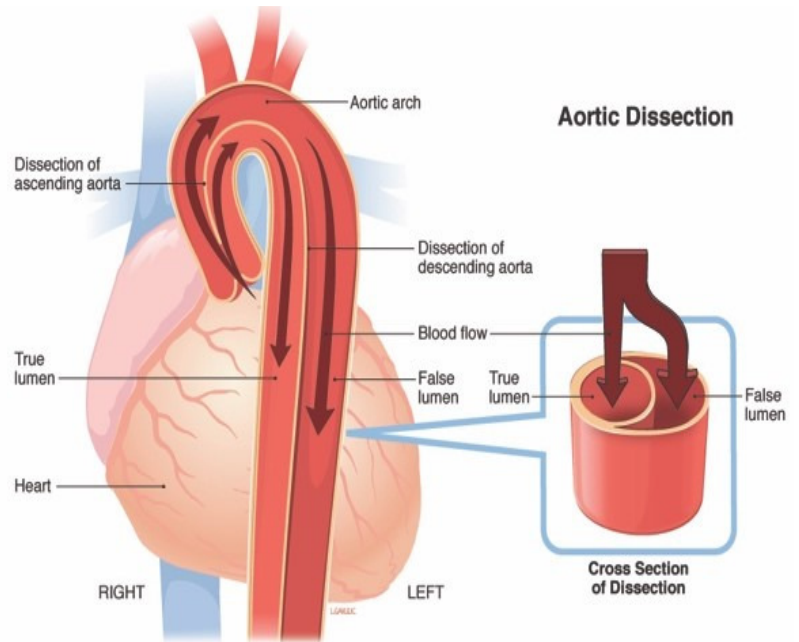
<http://aortainstitute.co.uk/conditions-and-diseases/aortic-aneurysm/thoracic-aortic-aneurysm-image/>

- The aorta has 3 layers, the intima (inner layer), the media (middle layer), and the adventitia (outer layer) that help to give it strength.
- Degenerative disease, atherosclerosis, and some genetic conditions can cause the media (middle) layer of the aorta to break down and become weak. This weakened area can become enlarged like a balloon expanding. When the aorta in your chest is enlarged, it is called a **thoracic aortic aneurysm**.

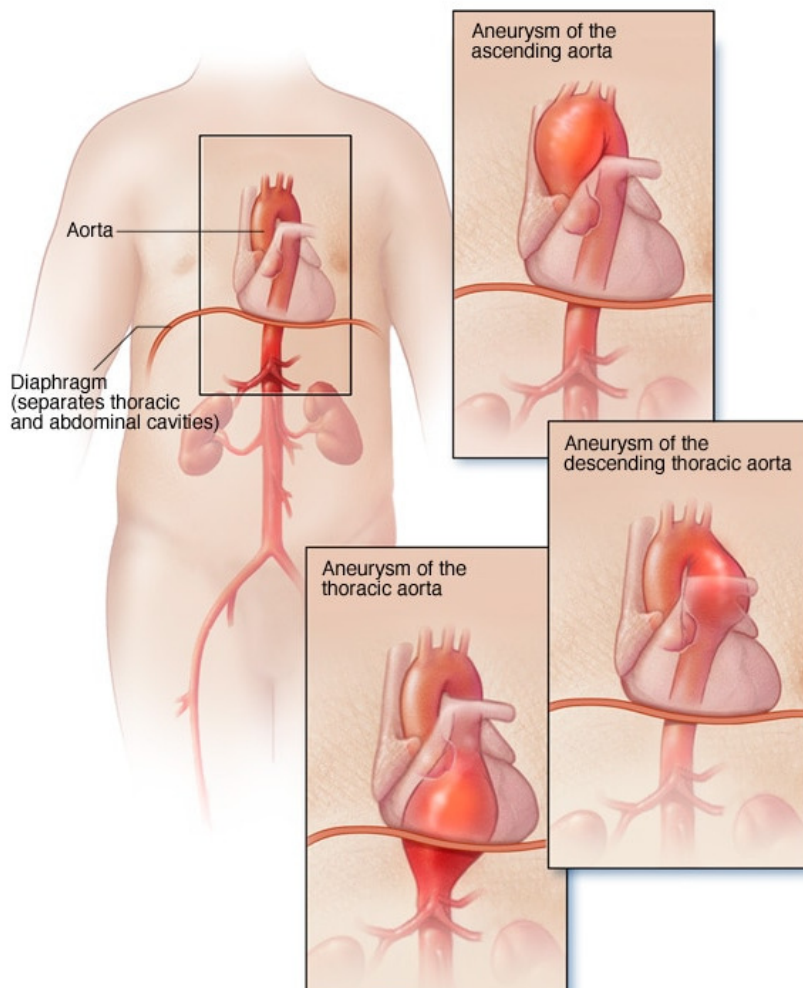


- Blood pumping against the walls of an aorta with weakened tissue can also cause a tear in the intima (inside) layer of the aorta.

When this tear occurs, blood flows between the layers of the aorta into the middle layer and causes a false channel (or false lumen). This is called an **aortic dissection** and can be either a chronic condition or an emergency situation.



<http://ctsurgervpatients.org/adult-heart-disease/aortic-dissection>



Blood between the layers of the aorta may also cause the aorta to expand into an **aneurysm**.

Your cardiac surgeon will discuss the surgical options for treating your thoracic aortic aneurysm or aortic dissection.

## Types of Aortic Surgery

- Depending on the location of your aortic aneurysm or dissection, as well as several other factors such as your age, and your overall health, you may have either an open surgical repair or an endovascular repair of your aorta.

### *Open Aortic Surgery*

- Open surgery of your aorta requires an incision through your chest wall and cardiopulmonary bypass in order for the surgeon to sew in a Dacron graft to replace the diseased portion of your aorta.

You may have an incision down the centre of your chest if you are having your aortic root, ascending aorta, or aortic arch replaced.

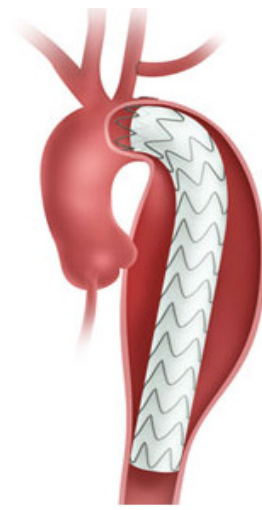
You may have a thoracotomy incision (on your left side, between your ribs going from the front of your chest to the back) if your descending or thoracoabdominal (in your chest and abdomen) aorta are being replaced.



*Aneurysm in descending*



*Open surgical repair with  
Dacron graft.*



*Thoracic endovascular aortic  
repair (TEVAR).*

## ***Thoracic Endovascular Aortic Repair (TEVAR)***

- Thoracic endovascular aortic repair (TEVAR) is a surgical option for specific types and location of aortic disease.

This surgery does not require a chest incision or cardiopulmonary bypass.

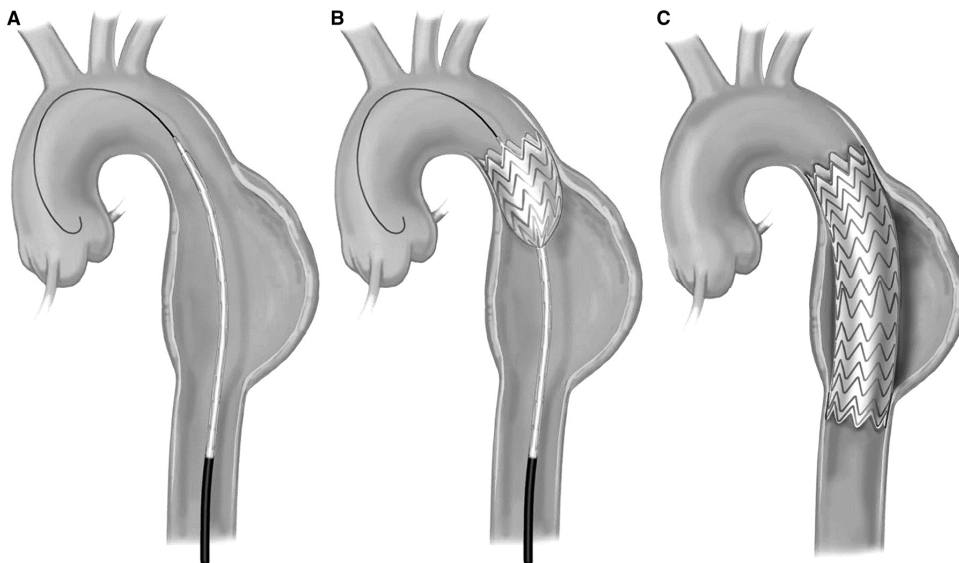
**Endovascular** means **from inside the blood vessel** and a stent graft is placed in the area of the aorta that is diseased.

To position this stent graft, two incisions are made in the large arterial blood vessels that come off your aorta and go to your legs.

In these arteries, catheters (tubes) containing the compressed stent grafts are inserted and positioned so that the blood is re-routed through the stent graft.

This surgery is done under continuous X-ray so the surgeons can see the exact position of the stent graft.

With the stent graft in proper position, the aortic tissue with the aneurysm and/or dissection is no longer subjected to the force of the blood in your aorta and further growth of the aneurysm is slowed or eliminated.



<http://circ.ahajournals.org/content/117/6/841>



## What to Expect Before Your Surgery

- You have been referred to a cardiothoracic surgeon who will review your case.

- **Depending on your heart condition and symptoms, you may:**

- 1 . Meet your surgeon and have your case reviewed in their office. **The surgeon's office will telephone you and set up an office appointment.**

**OR**

- 2 . Meet your surgeon the day prior to your surgery if you are currently waiting in the hospital to have your surgery done.

- At this meeting, your surgeon will review the surgical procedure, its risks and benefits and answer any questions you may have about the surgery.
- Your surgeon will ask for your signed consent to the surgery and for blood products to be given if required.
- Prepare to meet your surgeon by writing questions that you may have for him or her.

Patients often ask about surgical risks, waiting times and recovery times.

- These are possible consults, tests or teaching that may be done prior to surgery:

- Meet the anesthesiologist (the doctor who puts you to sleep while you are in surgery)
- Blood work
- Chest X-Ray
- Carotid Ultrasound
- Electrocardiogram (ECG)
- Pre-operative teaching done by a nurse
- Teaching about the surgery (pre and post-operative surgery video)

- If you are already admitted to hospital, these tests or consults may be done during your hospitalization
- If you are being admitted through the Same Day Admit Unit, some of these tests will be done through the Preadmission Clinic (PAC) the day before or up to a few weeks prior to your surgery.



## Pre-Admission Clinic

- All patients visit the Pre-Admission Clinic before surgery, except patients admitted to hospital through emergency.
- Bring all the medicine, supplements and herbal products you are taking in their original containers
- Also, bring a summary of your medical history and your health problems.
- You meet with a **Nurse** who will help guide you through the process of your surgery, go over what you need to do to get ready for surgery, and answer any questions you may have.
- You also meet with an **Anesthesiologist**, the doctor who gives you the anesthetic, the medicine you need to sleep through the surgery. They will discuss how your pain will be managed during and after your surgery.
- You are told which medicines you are to take or stop taking before the surgery. If you are not sure, ask us.
- Since we give a lot of information during the visit, **we encourage you to bring a family member or friend with you.**

## Emergency Admission

- Sometimes patients are admitted to the hospital through the Emergency Department and require urgent or emergent surgery.
- If this happens for you, your experience will be different.
- The **Nurse** on the hospital ward will guide you through the process of your surgery and explain the preparation required.
- The **Anesthesiologist** will visit you on the hospital ward.

They will ask you questions about your health and medical history.

They will discuss how your pain will be managed during and after your surgery.

# **Optimizing Yourself Before Surgery to Help Prevent Complications**

## **1. Move**

Exercise helps you be in the best shape possible before your surgery however you do have a cardiac condition.

**Check with your doctor before starting an exercise plan.**

## **2. Breathing**

Deep breathing opens up your lungs, exercises the lung muscles and improves oxygen deliver to your body. Coughing clears secretions from your lungs.

**Deep breathing exercise:** do a number of times a day

- Start by placing your hands on your ribs
- Take a deep breathe slowly through your nose, expanding your lower chest until you feel your ribs push against your hands
- Hold your breath for a count of 3 (3 seconds)
- Breathe out slowly through your mouth
- If able, repeat 3 more times

## **3. Smoking and Tobacco Use**

Research shows that people who stop smoking at least 1 month before surgery have fewer complications after surgery.

For free nicotine patches or gum to help you quit you can :

- Call the **Smoking Cessation Clinic** in the Cardiovascular Clinic on the 6<sup>th</sup> Floor of the Diamond Healthcare Centre at VGH. Call 604-875-4800 and select option 2

OR

email [Cessation\\_Clinic@vch.ca](mailto:Cessation_Clinic@vch.ca)

- Call 8-1-1 and register for the **BC Smoking Cessation Program**.
- Call the **QuitNow website** for help: [www.quitnmow.ca](http://www.quitnmow.ca)

#### **4. Diet, Nutrition**

Your body will need extra energy, nutrients, and calories to heal. It is important that you be in the best nutritional shape that you can be.

A dietitian can help you choose healthy foods that will help prepare you for surgery. If you have had unexplained weight loss or gain, in the past 6 months, if you have noticed a decrease in appetite, or if you are overweight or underweight, it may be helpful to speak with a dietitian.

You can get a referral to a Dietitian from your family doctor or you can contact a **Dietitian** by **calling 8-1-1 (Health Link BC)**.

**Be sure to tell them you are going for cardiac surgery.**

#### **5. Blood Sugar Control**

Prior to surgery your blood sugar may be checked with a blood test called **HbA1c**.

Maintaining normal blood sugar is important for wound healing, especially after surgery.

## Planning Now for When You go Home

Depending on the type of surgery you are having and your health, you can expect to go home 5 to 7 days after your surgery.

Planning ahead helps you and your family to prepare for a smooth recovery. Here is a list of things to get ready ahead of time.

- Arrange for someone to look after your home, pets and/or plants while you are in the hospital
- Arrange for someone to clean your house and do your laundry for six weeks after your surgery
- Stock up on non-perishable groceries, make and freeze meals to last you 3 to 4 weeks
- Arrange for someone to help you with your meal preparation and grocery shopping for 3 to 4 weeks after surgery
- Arrange for transportation to the hospital for surgery (e.g. car, plane, bus)
- Arrange for someone to drive you home and/or accompany you home from hospital if you are going home by bus, plane or ferry
- Arrange to fill your prescriptions on your way home from the hospital
- Arrange for a family member or friend to stay with you for the first few days after you get home
- Arrange for someone to take you to your doctor's appointments (1 to 6 weeks after your surgery)

### *How does your surgery affect family and/or friends?*

- Recovery involves adjustment for everyone.
- There may be stress resulting from changes in roles and expectations.
- Family and friends often feel anxious about the ability to help.
- **Be realistic** about what responsibilities and commitments are urgent and those that can wait. Postpone commitments and accept help from others

## Skin Preparation

- Preparing skin before surgery reduces the risk of infection at the surgical site.
- This hospital, along with your Doctor, advises uses cloths with Chlorhexidine Gluconate (CHG) antiseptic solution. This skin cleaning is done both the night before surgery and again the morning of surgery.
- You will need to buy **one package** of **SAGE – Antiseptic Body Cleanser (2% Chlorhexidine Gluconate)** to use at home the night before surgery.
- In hospital, on the morning of surgery, the Nurse will give you another package.
- The SAGE is not available everywhere. The Pre-Admission Clinic Nurse will give you a list of pharmacies that have it. **Do not substitute another product.**
- If SAGE is unavailable the Doctors prefer that you use an **Antiseptic Soap** not an Antibacterial Soap.

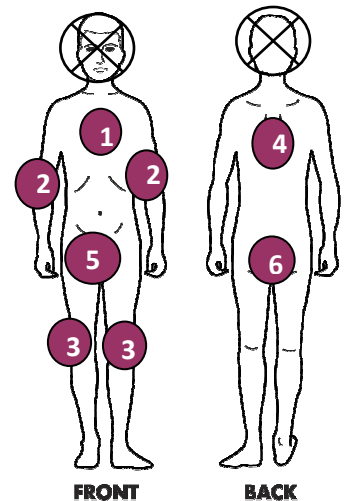
## Preparing Your Skin the Night Before Surgery:

- **Do not use** a razor blade to shave the surgical site the 2 days before surgery. For cardiac surgery this means, do not shave any area of the body, including chest, back, arms, and legs. You may continue to use an **electric razor**.
- Remove all jewelry, (rings, watches, chains, and body piercings), finger and toenail polish, false eyelashes, wigs, etc. before cleaning your skin.
- Jewellery can harbor bacteria and any metal on your skin can cause burns or injury during surgery.
- The evening before surgery, shower or bathe and shampoo your hair, **using warm, not hot water**.
- **Do not** apply any lotions, creams, makeup, deodorants, anything on the skin after bathing. Dress in clean clothes or sleepwear.
- **WAIT at least 1 hour after bathing**, before cleaning your skin with the SAGE.

- Open the SAGE package, use one cloth to prepare each area of the body. Wipe each area thoroughly in a back and forth motion.
- Use all 6 cloths in the package in the order shown in steps 1 through 6.
- **Do not use** the **SAGE** on your eyes, ears, mouth, any inner “private areas” or penis. **Do not use** on broken skin or open wounds. If skin irritation develops (rash, itching, stinging) stop using and rinse area with water and contact your Doctor.
- After using the **SAGE** cloths on your skin, allow the area to air dry for one minute. Do not rinse or towel off. It is normal for the skin to have a “tacky” feel for several minutes. Dress in clean clothes or sleepwear.
- Throw out all SAGE cleaning cloths in the garbage. **Do not flush in the toilet.**
- **Do not** apply any lotions, creams, makeup, deodorants, anything on the skin after using the SAGE cleansing cloths.
- **Do not** shower or wash after prepping the skin the night prior to surgery. In the morning, **only** wash your face and brush your teeth.

**Steps 1 – 6.** Use one cloth to prep each area of the body in the following order.

1. Wipe your **neck, chest and abdomen.**
2. Wipe **both arms**, starting with the shoulder and ending at the fingertips. Be sure to wipe the armpits thoroughly.
3. Wipe **both legs**, starting at the thigh and ending at the toes. Be sure to wipe behind your knees thoroughly.
4. Wipe your **back**, starting at the base of your neck down to your waistline. You may need help.
5. Wipe your **right and left hips**, followed by your **groin**. Wipe the outside folds in the **groin** area. Do not wipe the inner private areas (labia, vagina, urethra, or penis).
6. Wipe your **buttocks.**





# **What to Expect After Surgery**



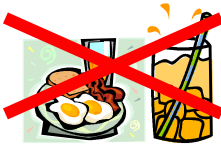

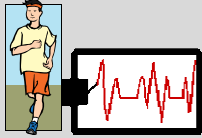



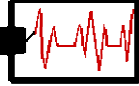



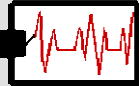



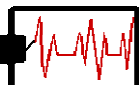






## ***Visitors***

- While you are in the hospital, family may visit. Inform your nurse if you wish to place limits on visitors.
- Please appoint one family member to call for updates on your progress.
- The best time to visit is in the late morning to late afternoon. Visiting is allowed until 9 pm.
- We ask that you be considerate of other patients by keeping noise to a minimum.

## ***Your Hospital Stay***

- The following pages describe a typical stay after open heart bypass or valve surgery. This is only a guide. Timelines may vary according to your procedure and your progress. Average hospital stay is 5 to 7 days.
- Patient and family teaching will be done throughout your stay regarding diet, exercise, care of surgical wounds, medications and coping at home after discharge. Education classes are held throughout the week (please ask your Nurse or Physiotherapist for the time). It is expected that you will see a Physiotherapist at some point during your recovery.
- During your recovery period in the hospital and at home, you may have “good days” and “bad days”. On the “bad” days, you may feel weak, tired, moody or depressed. This is a common experience for patients but you will gain strength and find your mood improving on a daily basis. Frequent rest periods and talking to someone about your feelings can help. The Nurse, Dietician, Social Worker, Physiotherapist, Occupational Therapist and Care Management Leader Nurse are available for support and information during your hospital stay.
- If you have any questions, please don't hesitate to speak to your Doctor or Nurse

# Cardiac Surgical Pathway

	Activity	Tubes and Lines	Pain Medication	Food and Nutrition
<p>Admission day</p> <p><b>Day of Surgery</b></p>	<p>Surgery    Bed rest</p> 	<p>Surgery – close monitoring in ICU after surgery heart monitor, breathing tube, IV, and drainage tubes</p>	 <p>IV</p>	 <p>No fluids No solid food</p>
<p><b>Day 1</b> after surgery</p>	 <p>Sit up Take a short walk</p>	 <p>Heart monitor</p>	 <p>IV / oral</p>	 <p>Fluids and food as tolerated</p>
<p><b>Day 2</b> after surgery</p>	 <p>Sit in a chair for meals &amp; walk with help</p>	 <p>Heart monitor</p>	 <p>less IV / Oral</p>	 <p>Solid food, Fluids</p>
<p><b>Day 3</b> after surgery</p>	 <p>Walking exercise</p>	 <p>Heart monitor Plan for discharge</p>	 <p>Oral</p>	 <p>Solid food, Fluids</p>
<p><b>Day 4</b> after surgery</p>	 <p>Stairs with physiotherapy</p>	 <p>Heart monitor chest wires removed confirm discharge</p>	 <p>Oral</p>	 <p>Solid food, Fluids</p>
<p><b>Day 5 and beyond</b></p>	 <p>Going Home</p>	 <p>Discharge</p>	 <p>Oral</p>	 <p>Solid food, Fluids</p>

## **Day of Surgery**

- If you are being admitted the day of your surgery, report to the Admitting Department which is located near the information desk in the lobby of the Jim Pattison Pavilion.
- The admitting staff will register you and direct you to the Peri-Operative Care Centre. One person only, can go in with you while we are getting you ready for surgery.
- After surgery, you will be transferred from the operating room to the Cardiac Surgery Intensive Care Unit (CSICU). You may see other patients nearby as they have had similar operations.
- You tend to wake gradually over time. When you wake up, you will have a breathing tube in your mouth, an intravenous (IV) in your neck vein, and drainage tubes (chest tubes and a urinary catheter).
- Once you are able to breathe on your own without the assistance of the breathing machine (mechanical ventilator), the breathing tube is removed out. This usually occurs within 4 hours of waking up.

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## For Families the Day of Surgery

- Once you are in surgery, your family can wait in the Intensive Care Unit (ICU) Waiting Room or leave a contact number where the surgeon can talk to your designated family member.
- The map on the next page shows the 2nd Floor of the Jim Pattison Pavilion and the Cardiac Surgery Intensive Care Unit (CSICU) and the ICU Waiting Room.
- **Please know that If your family has not heard from the surgeon at the expected time, the designated family member may call the Cardiac Surgery Intensive Care Unit (CSICU) at 604-875- 4277 for updates.**
- **If family is in the hospital, dial 54277 on the in-house phones.**
- **Whether you will be waiting to speak with the surgeon in person or would like to be called for an update by the surgeon, please be available at least 60 minutes before the scheduled completion time of the surgery.**
- It may be helpful to take this page with your to hospital as it has contact numbers on this side and a map on the other side.

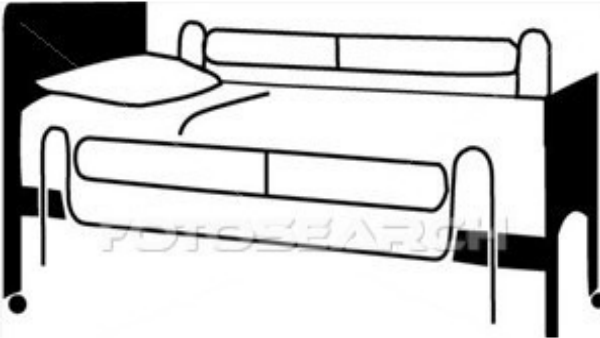


# General Guide to Post-Operative Recovery

## *Day 1 After Surgery*

- **Day 1 in CSICU**, you will have a chest x-ray, blood test and an electrocardiogram (ECG). If possible, chest tubes, urinary catheter (the tube in your bladder), and some IV lines will be removed.
- When you are ready and your bed is available, you will be moved by stretcher to the Cardiac Sciences Unit (LB 10AB).
- On the Cardiac Sciences Unit, you will become increasingly mobile and independent.
  
- **Diet**
  - You will start to eat regular foods and drink fluids
  - You will sit up on the edge of your bed, then in a chair for meals
  - Let your Nurse know if feel like throwing up, have difficulty swallowing or are on a special diet.
  - Ask your Nurse if you have any restrictions on the amount of fluid you can drink
  
- **Activity/Mobility**
  - You will start walking with assistance
  - Your Nurse and/or Physiotherapist will show you how to protect your sternal incision as you move
  - You will become increasingly mobile and independent
  
- **Pain Management is Important**
  - You will receive pain medication on a regular basis.
  - You should be comfortable enough to move and do your breathing exercises
  - Tell your Nurse if the medication does not provide enough pain relief.
  
- **Deep Breathing and Coughing**
  - Do 10 deep breathing and coughing exercises every hour while awake
  - Deep breathing and coughing regularly decreases your risk of getting Pneumonia
  
- You may have oxygen given to you through your nose.
  
- You will be wearing a portable heart monitor.
  
- Your target discharge date will be identified.

# Sternal Precautions After Heart Surgery: How to Get IN Bed



**STEP 1:**  
Put the top bedrail down and ensure the bed is completely flat. Ask for assistance if you are unsure of how to do so.



**STEP 2:**  
Sit about an arms-length down from the head of the bed.



**STEP 3:**  
Lean sideways, GENTLY; support yourself with your hands until you are lying on your side.



**STEP 4:**  
Lift your legs onto the bed one after the other.



**STEP 5:**  
If done correctly, you should be lying on your side. It is ok to lie on your back, but not your stomach

If this is too much effort or causes pain, ask for help and for pain medication.



# Sternal Precautions After Heart Surgery: How to Get Out of Bed



**STEP 1:**

Log roll onto your side with arms in front and knees bent, close to the edge of the bed.



**STEP 2:**

Drop your legs over the side of the bed.



**STEP 3:**

Gently push sideways with your elbow and arm and your trunk muscles to help you sit up. You can also use only your stomach muscles without your elbows if you are strong enough. Remember, don't push hard.

**If this is too much effort or causes pain, ask for help  
and for pain medication.**

**Potential Complications of poor sternal precautions when getting in and out of bed:**

- ❗ Dehiscence (the opening of the incision and the separation of the sternum or breast bone)
- ❗ Long-term sternal instability
- ❗ Delayed healing of the sternum
- ❗ Infection
- ❗ Future surgeries to repair the sternum
- ❗ Increased Pain

# Prevent Pneumonia: ICOUGH

## How to Deep Breathe and Cough



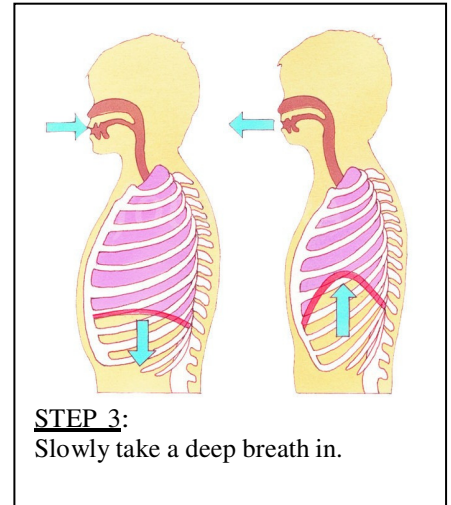
To assist in deep breathing, use the incentive spirometer given to you. Remember to breathe out first, then place breath in to bring up the ball(s). Try to hold the ball(s) up for 3 seconds and then let go. Do this procedure at least **5 to 10 times every hour while you are awake.**



**STEP 1:**  
Place the heels of your hands along the incision line on top of your pillow.



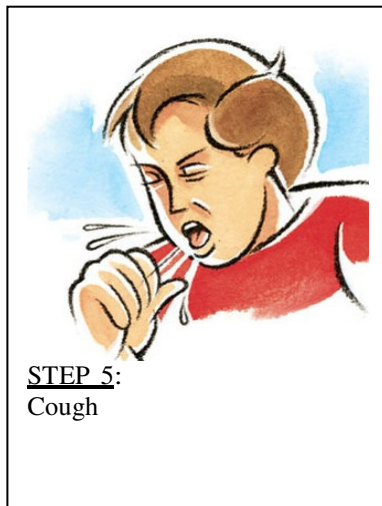
**STEP 2:**  
Push elbows outwards.



**STEP 3:**  
Slowly take a deep breath in.



**STEP 4:**  
Using the heels of your hands, with your elbows out, apply pressure to the pillow.



**STEP 5:**  
Cough

Repeat steps 1-5, five to ten consecutive times every hour while you are awake.

If this is too much effort or causes pain, ask for help and for pain medication.

## Why deep breathing and coughing are important after cardiac surgery:

- To prevent or treat atelectasis, a condition of the lung characterized by collapsed, airless alveoli. Atelectasis can occur one hour after heart surgery and can continue for up to 8 weeks.
- Reduces the chances of getting pneumonia
- Helps maintain oxygenation to your body
- Improves airway clearance
- Improves your breathing pattern
- Faster recovery time

## *Day 2 After Surgery*

- A chest x-ray, blood test and an ECG will be done in the morning.
- If you had valve surgery, you may start taking a blood thinner (anticoagulant) and have a blood test (INR) done every morning.
- The urinary catheter, the tube in your bladder may be removed if not already.
- You will continue to wear a heart monitor.
- You will be weighed before breakfast.
  
- **Diet**
  - You will be given a laxative if you have not had a bowel movement since surgery.
  
- **Activity/Mobility**
  - You will sit up in the chair for meals and go for a walk.
  - Do as much as you can for yourself but do not over exert yourself.
  - This will get you home faster.
  
- **Pain Management and Deep Breathing and Coughing**
  - Tell your Nurse if you are having pain.
  - You should be comfortable enough to move around and do your deep breathing exercises every hour while awake

## *Day 3*

- You will be weighed before breakfast.
  
- **Diet**
  - You will continue to eat regular foods and fluids. Let your nurse know if you feel sick. You may have less of an appetite. If this is the case, try to eat smaller amounts more often. You need nutrients to heal.
  
- **Activity/Mobility**
  - Practice getting in and out of bed on your own through side-lying. If you are not sure how to move safely to protect your sternal incision, ask your Nurse or Physiotherapist
  - Continue walking around and sitting up in a chair for meals
  - Continue doing deep breathing and coughing exercises
  
- **Discharge**
  - You will **start planning for going home**. Let your nurse know if you will need help at home. Make plans with your family regarding transportation home.

## *Day 4*

- You will be weighed before breakfast.
- **Activity/Mobility**
  - Practice getting in and out of bed through side-lying.
  - Plan activity and rest times so that you always sit in a chair for meals and walk 3 to 6 times per day. Let your Nurse or Physiotherapist know if you are having difficulty with activity.
  - To see if you are ready to do home, Physiotherapy will take you to walk up and down the stairs.
- **Deep Breathing and Coughing**
  - Continue doing your deep breathing and coughing exercises.
- Your Nurse may remove the staples and sutures from your incision.
- Your Doctor may remove the purple wires from your chest. You will need to stay in bed for 30 minutes afterwards.
- **Discharge**
  - If needed, you and your support person may be shown how to change a simple dressing at home.
  - You and your family will watch a video, "Going Home After Heart Surgery".
  - Confirm your arrangements for going home.

## *Day 5 and Beyond – Going Home*

- The goal for going home after heart surgery is on Day 5. This is a general guideline. Your specific discharge planning will depend on your progress and the type of surgery you had.
- Our clinical team specifically reviews your plan of care and is committed to making sure you are ready and safe to be discharged home.
- You will have a blood test, chest x-ray, and be weighed before breakfast.
- Wash in the bathroom or shower on your own.
- The IV in your arm will be removed.
- The portable heart monitor will be removed.
- You will be given a heart pillow from Pacific Open Heart, if not already done.
- You will be given a prescription to be filled with instructions on when and how to take your medications.
- The Doctor or Nurse will review the discharge information with you and your family.
- Be ready for **Discharge at 11:00 am**. If your ride home is later than 11:00 am, you may need to wait in the patient lounge.

## Minimally-Invasive Surgery

- After minimally-invasive surgery there are fewer restrictions on your activities and therefore you will generally have a quicker recovery.

For patients having minimally-invasive surgery with **robotically assisted CABG**, discharge can occur as early as post-operative Day 3.

For patients having minimally-invasive surgery for **mitral or tricuspid valve surgery** or **ASD closure surgery**, discharge can occur as early as post-operative Day 4 or 5.

- Recovery following minimally-invasive surgery is usually quite different than it is for patients who have a sternotomy.

With minimally-invasive surgery, there are **no restrictions on lifting after surgery**. You are allowed to lift anything that you feel comfortable lifting, understanding that your chest and ribs may be quite sore the first few days after surgery.

- You may sleep however you feel comfortable.
- To reduce post-operative pain after minimally-invasive surgery, you **may** have an **epidural**, a small catheter (tube) that is inserted into the epidural space near your spine. This is done just before the surgery by the Anesthesiologist (the doctor who puts you to sleep for the surgery).

The **epidural** controls pain by blocking nerve responses to pain in the spinal cord.

The epidural can provide anesthesia (pain control) to either your left or right side, depending on where your surgical incision is made.

Depending on your level of pain, the epidural catheter is usually removed on post-operative Day 2 by the Anesthesiologist.

- For **mitral or tricuspid valve surgery** and **ASD closure surgery**, you will have a small incision in your right groin. It will be covered with a vacuum dressing for 5 days after surgery. Helps prevent developing a lymphocele (a collection of lymph fluid) after surgery. You are able to walk around with this device attached to you.
- There is no formal restriction on driving after minimally-invasive surgery, **unless** you have excessive pain or a problem with your heart rhythm.

## **Potential Complications**

- Having any type of surgery is not without its risks and although your health care team will be doing everything possible to prevent any complication from happening, certain post-operative complications may occur.
- Your surgeon and your health care team will discuss and review the most common complications in preparation for your surgery. Below are some common complications that our cardiac surgery patients may experience:

### ***1. Atrial Fibrillation and Atrial Flutter***

- Atrial fibrillation/atrial flutter is a heart rhythm that occurs often after cardiac surgery due to the combined effects of having surgery on the heart.
- Your health care team will be monitoring you for this, which is one of the reasons that you wear the portable heart monitor after surgery.
- Patients say that fatigue is the most common symptom from this heart rhythm.
- If you experience this heart rhythm, your surgeon and health care team will treat it, usually, with medications.



## *2. Post-Operative Delirium*

- Delirium is a sudden change in your mental state that causes confusion.
- Approximately one third of the patients who undergo cardiac surgery may experience delirium and its severity can vary greatly.
- Delirium commonly occurs in older adults and people with serious or chronic medical conditions. Other risk factors may include alcohol withdrawal, lack of sleep, poorly managed pain, infections, some medications, or dehydration.
- Those experiencing delirium may be very sleepy, hard to wake up, restless or combative. They may also see or hear things that are not really there.
- It is important to understand that delirium is a medical condition that usually improves by treating the underlying cause.
- The health care team understands delirium can be scary, and will ensure that you are safe and comfortable. The health care team will also be there to answer any questions for your family members, and will encourage their involvement in your recovery.

## *3. Pneumonia*

- Pneumonia is an infection that inflames the air sacs in one or both lungs. The air sacs may fill with fluid or pus (purulent material), causing a cough with phlegm, mucous, or pus, fever, chills, and difficulty breathing.
- A variety of organisms, including bacteria and viruses can cause pneumonia.
- On Day 1 post-op “Prevent Pneumonia: ICOUGH – How to Deep Breath and Cough” explains the proper technique for deep breathing and coughing.

## *4. Stroke*

- A stroke can occur when there is not enough blood passing through the brain. This can occur when you have a bleed in one of the blood vessels in the brain, or when there is a blood clot preventing blood from passing through.
- Symptoms for stroke include facial drooping to one side, numbness or weakness in one arm, a sudden inability to speak properly, and blurred vision in one eye.
- Your risk for developing a stroke is assessed by your surgeon before surgery.



## 5. Dysphagia

- Having a breathing tube in your throat during surgery can irritate or damage your esophagus (the tube through which food you swallow goes to your stomach). The damage may cause difficulty swallowing.
- In some cases, a feeding tube through your nose will be needed to provide you with food, water and medications. This feeding tube will be removed when a swallowing test is done and you have passed and can safely swallow again.

## 6. Blood Transfusions

- There is a possibility that you may require a blood transfusion before, during or after your heart surgery. You will be asked before surgery, to sign a consent form if you agree to receive blood.
- If you do require a blood transfusion, the risks of not getting a transfusion are much greater than the remote chance of being transfused with infected blood. Canada's blood system is among the safest in the world according to the World Health Organization ([www.bloodservices.ca](http://www.bloodservices.ca))
- Your surgeon will discuss specific indications for and risks of blood transfusions prior to surgery when you sign your surgical consent.



# *CONGRATULATIONS !* You Are Going Home

## ***Preparing To Go Home***

You and your family/friends should be planning for discharge from the moment that you receive this guide. Planning early will make your discharge from hospital easier. The health care team are available to assist you. Your Doctor will discharge you when you are medically stable which is usually the 5<sup>th</sup> day after surgery.

### **Am I Prepared?**

Ask yourself these questions:

- ✓ How am I getting home?
- ✓ Do I know how to take care of myself?
- ✓ Do I have the appropriate equipment?
- ✓ If I need assistance, do I have someone to help me?
- ✓ How will I fill my prescriptions?
- ✓ How will I get to future appointments?

### **How Will I Get Home?**

- It is up to you to arrange transportation home. Patients are not allowed to drive for a period of time after their hospital stay. Review your restrictions with your Doctor or Nurse.
- You may travel home by any form of transportation: car, bus or plane.
- **Ambulance services are not used to return patients to their homes.**
- Most patients do not require nursing care after discharge. Your Doctor may order Home Care Nursing, if you require certain treatments or care at home like help with intravenous medications or dressings.
- You may be eligible for home help services if you do not have family or friends to help you. Ask to see the Care Management Leader (CML) for more information.

## **Cardiac Rehab Program**

The Care Management Leader (CML) refers all patients to the Cardiac Rehab Program in their community. It includes cardiac education, counselling, exercise prescription, diet counselling and more. It is usually started 2- 3 months after surgery.

## **Bathing or Showering**

- Sponge baths are okay.
- Tub baths should be **avoided** until your incisions are fully healed which occurs at around 6 weeks after your surgery.
- If showering do not let the water spray right on your incision. Soaking your incision in the tub or having water spray on it may damage the healing skin.

## **Diet and Nutrition**

- Your body needs nutrition for healing and recovery from surgery.
- It is normal to have a smaller appetite after surgery and your appetite will improve as you start feeling better. Make sure you are eating enough to maintain your weight.
- Resume your usual diet at home. For 2 months after your surgery, you will need to eat a normal diet for the nutrients required for healing. Afterwards, you should return to a cardiac diet – low salt and low saturated fat diet.
- You may be placed on a 1.5 Litres per day fluid restriction. This helps prevent fluid retention and swelling in your legs.
- When you attend the Cardiac Rehab Program you will have the opportunity to see a dietitian and have your diet reviewed and adjusted as needed for long term health.

## **Deep Breathing and Coughing Exercises**

- You should do your breathing exercises as often as you can. Try to do 10 breaths and coughs every hour.
- Regularly doing your breathing exercises will prevent lung complications

# Prevent Pneumonia

Remember to **ICOUGH<sup>sm</sup>** everyday



**I**NCENTIVE SPIROMETRY: Every 30 min  
To open up your lungs (3 times)



**C**OUGHING & deep breathing: Every 30 min  
To clear your lungs (3 coughs)



**O**RAL CARE: 3 times per day  
A clean mouth is safer



**U**P: Have the head of bed up – Ask how high  
This helps your lungs expand



**G**ET MOVING: Movement is good for you!  
Ask about your personal activity plan



**H**AVE A CONVERSATION:  
You're at risk to get pneumonia!  
Talk to your care team about pneumonia prevention

**DON'T give pneumonia a chance!**

# Prevent Pneumonia

## BREATHING EXERCISES

Did you know...anytime you are in the hospital, your lungs need help to prevent pneumonia. Pneumonia is a potentially life threatening condition and can cause serious complications. You are an important member of your care team. Do these exercises frequently while awake to reduce your chance of getting pneumonia.

The best exercise is getting up and moving around!

Use your [Pneumonia Prevention Checklist](#) to keep track of these activities, or ask for assistance.

**Use of Incentive Spirometer:** 3 times every 30 minutes to expand your lungs.

1. Exhale normally, letting all the breath out.
2. Hold the spirometer in an upright position & close your lips around the mouthpiece.
3. Inhale through mouth until the balls are raised completely, hold the balls up for 2-3 seconds.
4. Remove the mouthpiece and exhale.

**Deep Breath and Cough:** 3 times every 30 minute to clear your lungs. This helps remove mucus from your lungs. Mucus is a good environment for pneumonia germs to grow in.

1. Take a [faster deep breath and cough](#) Get rid of that mucus!
2. Take a 30 second break. Repeat 2 more times.

**Oral Care:** 3 times a day: morning - noon – night.

Brushing your mouth (teeth, gums, and tongue) removes germs which can move down into your lungs and can cause pneumonia.

**Get up and Get moving:** Have a conversation about your personal activity goals.

Be active and moving as often as you can. Also, sit in a chair for meals and at least 15 minutes after eating. Activity helps lung expansion and reduces your pneumonia risk.

## Pain

- You should be comfortable enough to move, sleep, take a deep breath, and to Cough. If not, take your pain medication.
- Most patients state they have soreness or stiffness that may last several weeks. It may also only last a few days.
- The stiffness and soreness can be helped by changing your position frequently when lying down, being active and taking pain medication regularly as needed.

## Sternal Incision Pain

**When your sternal incision is PAINFUL**, try these suggestions to help reduce the discomfort:

- Follow all sternal incision precautions carefully.
- Take prescribed pain medication regularly.
- Keep arms supported when sitting or lying:
  - **In bed**, support each arm comfortably on a pillow.
  - **In a chair**, rest arms on armrests, without pushing. If armrests are too low, support arms on pillow or table.
  - **Avoid** sitting for long periods in a chair without armrests.
- You may hug a small pillow to your chest, especially when changing positions, deep breathing or coughing, if these activities cause pain
- If the pain is severe or pain has increased and the suggestions here do not help, see your Doctor.
- **Avoid using canes or walkers unless** the Physiotherapist or Doctor has recommended it.

**When your sternal incision is CLICKING**, this means the bone is not stable yet, even if there is no pain.

- Follow sternal precautions carefully.
- Avoid movements that cause clicking.
- The bone will stop clicking and will heal if you follow the precautions.

## Incision Care – Sternal (Chest) Incision, Arm and Leg Incisions

- After discharge home, check your incision(s) every day.
- Wash with mild soap and water. Do not scrub your incisions vigorously
- Avoid tub baths until your incision(s) are healed, around 6 weeks.
- Do not let the water spray right on your incision. Soaking your incision in the tub or having water spray on it may damage the healing skin.
- Strips of tape called “steri-strips” may have been used to assist in securing your incision(s). If the tape gets wet, pat them dry. They will fall off around 6 to 10 days after leaving the hospital.
- As your incision heals, it may become itchy. Itchiness is a normal part of the healing process. Avoid rubbing or scrubbing your incision. **Do not use** lotions or powder on your incision until the skin is completely healed at around 6 weeks.
- To prevent your scar from darkening, when outside, cover your incisions for the first year as they can easily be sunburned.
  
- Contact your Doctor if you notice:
  - Thick yellowy-green drainage from any incision or chest tube site
  - An area in your incision that is red, tender and warm to touch
  - New swelling or a sharp pain in your incision
  - Fever

## Sternal Precautions

- Your Doctor has surgically cut your sternum (breast-bone) in half to do your surgery. This bone is wired together with stainless steel wires that remain in place to ensure proper healing and avoid complications. Follow the instructions given by the Nurse and Physiotherapist on “sternal precautions”.
- The breast bone takes 8 to 12 weeks for the bone to heal. For the first 2 months, avoid anything that will shift or separate the breast bone and always support your sternal incision with your hands or chest pillow. Straining your sternal incision may increase your pain and delay healing which could increase your chance of getting an infection.
- To avoid straining the sternal incision, avoid pushing, pulling, lifting or carrying anything heavier than 10 pounds. This includes lifting a small child or doing housework (i.e. mowing the lawn, vacuuming, sweeping).
- Avoid using the armrests of a chair to stand up or sit down.  
Use your leg and abdominal muscles to stand up and sit down.

### *During the 8 Weeks After Surgery*

- € Do not push with hands on bed or chair when moving
- € Do not push or pull with one hand
- € Do not lie on your stomach
- € Do not lift or carry over 10 lbs (4.5 kg). This includes laundry, groceries, lawn mowing, vacuuming.
- € AVOID movements that cause pain or clicking of the sternum
- € Do not swing your arms too vigorously while walking
- € Support your sternal incision when coughing or sneezing

**\*\* Continue these precautions for 8 weeks even when pain-free.\*\***

### *After 8 Weeks*

- If the incision seems stable and pain free, you may discontinue the precautions and carry out any activity that does not cause pain.
- HOWEVER, you still need to avoid very heavy pushing or lifting.
- Check with your Doctor before golfing, swimming and other sports activities.

### *After 4 Months*

- If there is no pain or clicking and the incision is well healed, you do not need to follow any sternal precautions.



## *Potential Complications of poor sternal precautions when getting in and out of bed*

- Dehiscence (the opening of the incision and the separation of the sternum or breast bone)
- Long-term sternal instability
- Delayed healing of the sternum
- Infection
- Future surgeries to repair the sternum
- Increased pain in the sternum

## Home Exercises After Sternotomy (Chest Incision)

- Some of these exercises may have been done with the Physiotherapist or Rehab Assistant while you were in hospital.
- We suggest that you continue to do these exercises at home, in order to improve your flexibility and prevent stiffness.
- Do these exercises daily in the morning for another 4 weeks after discharge and as a warm-up before going out for your daily walk.

### *Posture*

- When walking, standing or sitting, be aware of your posture.
- Keep your head up, chin in, shoulders relaxed and back straight.
- Do not hug your chest pillow all the time. Use it to support your incision when painful and when coughing.

### *Instructions*

- While doing the exercises, keep your eyes open and remember to breathe. **Do not hold your breath.**
- All exercises are to be done slowly and smoothly in a comfortable range of movement.
- Do not bounce.
- If an exercise causes pain, try it more slowly and gently, or avoid that exercise for a few days before trying it again.
- Sit on a chair without arm rests, with your hands on your lap and your feet on the floor. Do not lean back against the chair.
- Each exercise should be a gentle pain-free stretch.
- Do 10 repetitions of each exercise.

### **Remember:**

**Your sternum takes 8 weeks to fully heal after your surgery**

## Exercising After Cardiac Surgery

- Although recovery usually takes 8 to 12 weeks, each patient will recover at their own rate. Many things affect the time it takes to feel fit again. Some of these include how active you were before surgery, what kind of surgery you had and your age.
- When you go home, you may be surprised by how tired you feel. This feeling is normal. Your energy level will improve over the next few weeks.

### *For a period of 6-8 weeks following surgery, you need to exercise*

- During this time, mild to moderate exercise is very beneficial in maintaining your general strength and condition and preventing the complications brought on by inactivity
- Walking is an excellent low intensity exercise
- High intensity exercise is not appropriate at this time.
- Always follow the sternal precautions when exercising.

### *After 8 Weeks*

- If your sternal incision seems stable and pain free, you may discontinue the precautions and carry out any activity that does not cause pain.
- HOWEVER, you still need to avoid very heavy pushing or lifting and check with your Doctor before golfing, swimming and other sports activities or using weights or other resistance exercise.

### *After 4 Months*

- If there is no pain or clicking and the incision is well healed, you do not need to follow any sternal incision precautions.

## General Guidelines for Daily Exercise

- Begin walking daily. Walk at a moderate pace. Do not walk too slowly although you should never feel pushed or breathless at your walking speed.
- **Warm-Up** - walk the **FIRST** block slowly to warm up muscles and allow the heart to accommodate the activity
- **Cool-Down** - walk the **LAST** block slowly to allow the heart rate and breathing to return to resting rates.
- Warm-up and cool-down reduce muscle stiffness the next day and improve your ability to exercise.
- Increase the distance when it feels comfortable to do so but it is not necessary to increase the distance every day.
- If you are feeling particularly tired one day, then do not walk as far the following day.
- If you become short of breath, overtired or have any unusual symptoms, then **STOP and REST**
- If you have any symptoms that concern you call your Doctor.
- Do not use the treadmill, bike or stair climber for exercise at this time until you join the **Cardiac Rehab Program** which teaches you to use the machines safely and properly for your individual health condition.

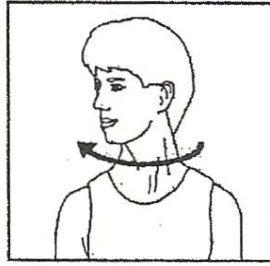
### **LISTEN TO YOUR BODY**

- It will tell you when to stop what you are doing and when you are ready to do more.
- If you notice that you are sweating, feel short of breath or feel very tired during activity **STOP and REST**.
- You may have increased your activity too fast.

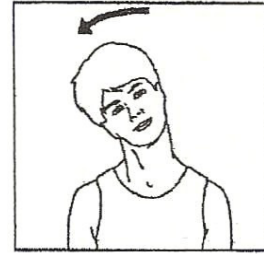
## Neck



Gently drop chin to chest, then raise chin again.

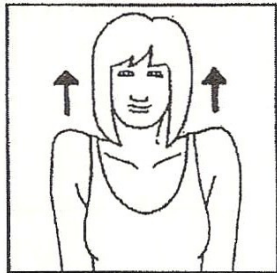


Slowly turn head to look over each shoulder



Gently tip head sideways toward one, shoulder then to the other shoulder.  
(Do not raise shoulders)

## Shoulders

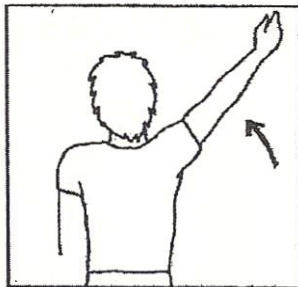


Shrug shoulders up toward ears, hold, then relax.

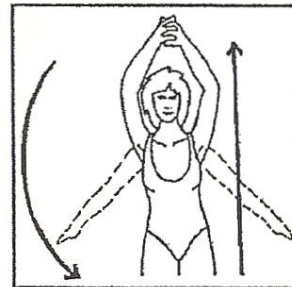


Rotate shoulders (not elbows) forward several times, then backwards.

Note: If this is painful, try doing one shoulder at a time.



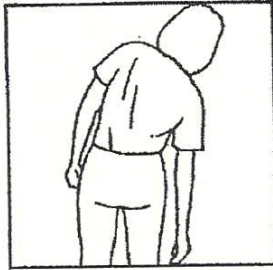
Slowly raise one arm above your head then down again. Repeat with the other arm.



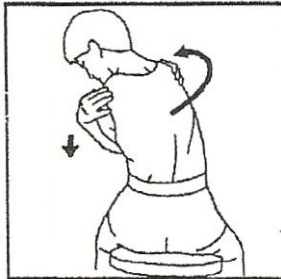
Slowly clasp hands together. Raise arms up above your head as high as is comfortable, then back down again.

Note: It is alright to raise arms over head briefly, as long as you do not hold, lift or push. If this is painful, try doing one shoulder at a time.

## Chest

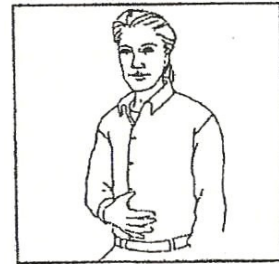


With arms by your sides, slowly bend sideways, reaching toward the floor on one side of the chair, then the other side. Do not lean forward.



Fold arms across your chest. Rotate gently through the upper back, turning slowly to look behind you to one side then the other. Remember to breathe.

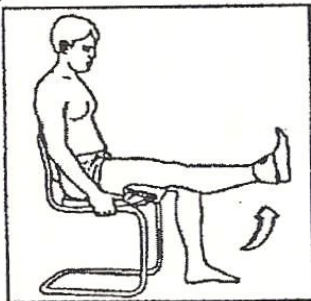
## Breathing



Breathe in deeply through nose keeping tummy relaxed. Without raising your shoulders, feel your ribs move outwards. Hold briefly, then breathe out slowly through mouth. Relax a moment & repeat.

Note: If sternum is clicking, avoid these two chest exercise for now

## Legs

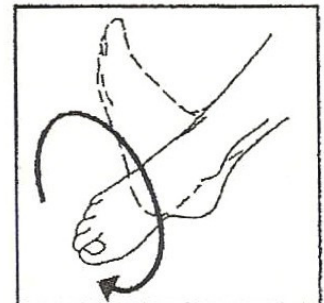


Straighten one knee. Keeping leg straight & ankle bent, lift thigh up off chair & hold for a count of 5. Repeat with the other leg.

## Ankles



With legs stretched out in front of you, move ankles up and down, then in circles.



**Back** Keeping your back straight, gently reach down to touch your toes. Do not strain. Remember, do not bounce.

## **Recovery – Balancing Rest and Activity**

- Rest and activity are both important parts of your recovery. Here are some guidelines to help you both rest and be active.
- Take things one day at a time.
- Alternate rest with exercise/activity.
- Get 8 hours of sleep every night.
- Plan two 30-60 minute rest periods each day during the first week at home.
- These can be naps or just relaxing times
- Walk outside on flat ground, avoiding hills.
- Do not walk for one hour after meals.
- Try to walk every day. If this is not possible, aim for at least 3 times a week.
- Avoid walking during the hottest or coldest time of the day. Avoid exercise in extreme temperatures. Shopping malls provide a good place to walk.
- Walk with someone or in a safe public place.
- Discuss duration and distance of walking with your Doctor if in doubt.

## Helpful Recommendations at Home

Following is a list of things you may need to consider once you are home to ensure a speedy recovery.

Chairs:	If you are having problems getting up from lower chairs, choose a higher chair or make the seat higher by adding an extra cushion. Inexpensive 2 or 4 inch dense foam cushions are available at foam shops. Recliners may be used if you can sit and stand out without pushing with your arms.
Bed:	If you find it easier or more comfortable to have the head of the bed raised, you can use extra pillows or get a foam wedge from a foam shop or medical supply store.
Toilet:	If you cannot stand up from a low toilet without pushing, a raised toilet seat will help. Avoid getting a raised toilet seat with armrests if you have a sternal incision (sternotomy).
Bathing:	Incisions can get wet but do not soak or scrub incision. Wash gently with mild soap and pat dry.  Do not sit down inside a bathtub because you cannot avoid pushing while getting in or out. Also, you should not soak your incision under water. Instead, shower for the first 8 weeks.
Getting into the Tub:	A clamp on the tub grip will ease stepping over the side of the tub. This will not work with glass sliding door.  A shower chair or stool allows for sitting while showering in the tub.  A tub transfer bench may be used if you have difficulty standing on one foot to step over the side of the tub.
Shower Stall:	Use a bath chair or stool to sit while washing for at least the first few weeks.  A clamp on tub grip on the side of the tub will be more secure inside the tub. You can get a free loan of a bath bench from Red Cross.
Cars:	Your Doctor will advise when you may drive.  Get into a car by sitting sideways on the seat and then bring your legs in. You can pad the seatbelt if the shoulder strap rubs on your incision.
Dressings:	Avoid tight clothing that will be a strain to put on. Sit down to dress, especially for pants and socks to avoid the risk of losing your balance. Women may wear a bra if it does not rub against the sternal incision.  You may lean forward to dress your feet or bring your foot up to your knee while sitting.

### Where to get Equipment:

- Call Red Cross Loan Program or rent/purchase from a medical supply company.
- You will need a prescription from the occupational and/or physiotherapist to borrow equipment from the Red Cross

Your Nurse or Physiotherapist will be pleased to answer any questions you may have about exercise and activity.



## **Sexual Activity**

- Sexual activity uses the same amount of energy as climbing up 2 flights of stairs at a normal pace. When you can climb 2 flights of stairs without getting tired or short of breath, you can return to normal sexual activity.
- To protect your healing sternum (breast bone), do not use positions that put pressure on your chest or that need support from your arms. Use a position that you and your partner find comfortable.
- Avoid sexual activity after a large meal or after exercising. If you feel tired or tense, wait until you are more rested.
- Some people find that their sex drive may be reduced in the early recovery period after heart surgery. This usually improves as you begin to feel stronger.

## **Emotions and Feelings**

- After surgery some people feel “blue” or low in spirits. This can happen in the hospital or after going home. This is common and may last a few days to sometimes a few weeks.
- Family members may also feel a range of emotions.
- Talking about your feelings to others may help you and your family deal with your emotions/feelings. If you continue to feel “blue” or you are concerned about your feelings, please talk with your family doctor.
- After major surgery, a few people have changes with their sleeping habits or bad dreams. Others have trouble concentrating and remembering. This usually gets better by the end of the recovery period. If not, please talk to your family doctor.

## **Driving and Riding in a Car**

These are **General guidelines** – Please ask your doctor for instructions for when you can start driving.

- Cardiac artery bypass graft surgery: do not drive for 4 weeks for non-commercial drivers and 3 months for commercial drivers
- Surgically treated valvular heart disease (from the date you are discharged home):
  - Non-commercial drivers: do not drive for 6 weeks
  - Commercial drivers: do not drive 3 months or more
- As a passenger, stop the car every 2 hours to get out and take a short walk.





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