

# Before, During and After Heart Surgery

*A guide for patients having coronary  
artery bypass, heart valve or other  
heart surgeries*



**Name:**

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## Contacts

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### My Doctors

Heart surgeon: \_\_\_\_\_ **250-595-1833**

Cardiologist/internist: \_\_\_\_\_

Primary care provider: \_\_\_\_\_

Other: \_\_\_\_\_

### Resources

Cardiac Surgery Triage Nurse 250-370-8019

Cardiac Social Worker 250-370-8234

Cardiac SDSA Program 250-370-8111  
Ext. 17322

Cardiac Surgery Nurse Practitioner 250-370-8111  
Ext. 17341

3 South, Heart Health Unit, Patient Care Centre  
(before surgery) 250-370-8111  
Ext. 17300

3 North, Heart Health Unit, Patient Care Centre  
(after surgery) 250-370-8111  
Ext. 17302

Cardiovascular Unit (CVU) 250-370-8351

Royal Jubilee Preadmission Clinic 250-370-8499

South Island Cardiac Rehab Program 250-519-1601

**Cardiac surgeon's website:** <https://www.victoriacardiacsurgery.ca>

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This booklet was written as a resource to help you and your family with what to expect before, during and after your heart surgery.

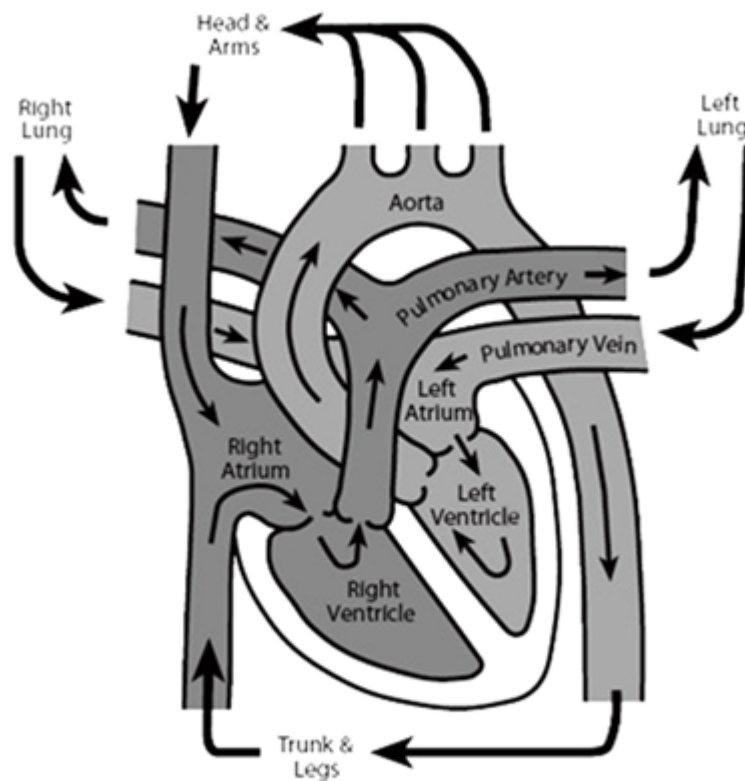
There is a lot of information in this booklet. There will be some information you do not need right now. Take your time reading the sections that are important for you to know. There is some information here that may not pertain to your heart operation or situation.

The information in this booklet is intended solely for the person to whom it was given by the health care team. It does not replace the advice or directions provided to you by your surgeon.

## Understanding Heart Disease

### The Heart

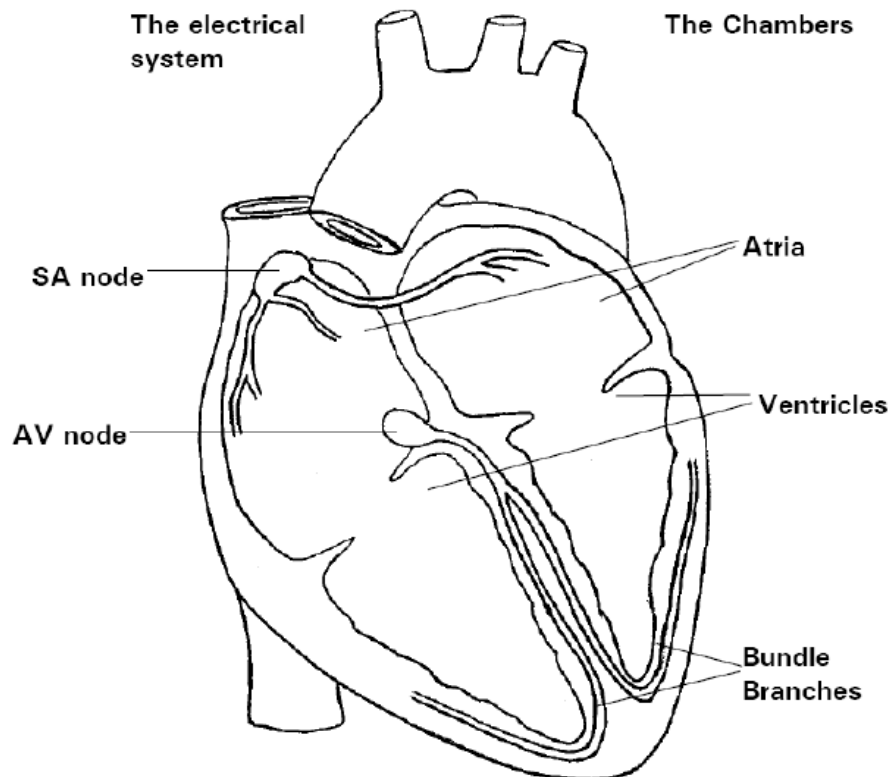
The heart is situated in the centre of your chest, just behind the sternum. The average size of the heart is about the size of the clenched fist. It pumps oxygen and nutrient rich blood to the organs and tissues then receives oxygen poor blood: The left side of your heart receives oxygen-rich blood from the lungs and pumps through the body. The right side of your heart receives oxygen-poor blood from the body and pumps it to the lungs to take up oxygen. Each side of the heart consists of an upper chamber (atria) and a lower chamber (ventricle).



The chambers are divided by valves that control the flow of blood between the atria and ventricles. Oxygen poor blood enters the right atrium and passes

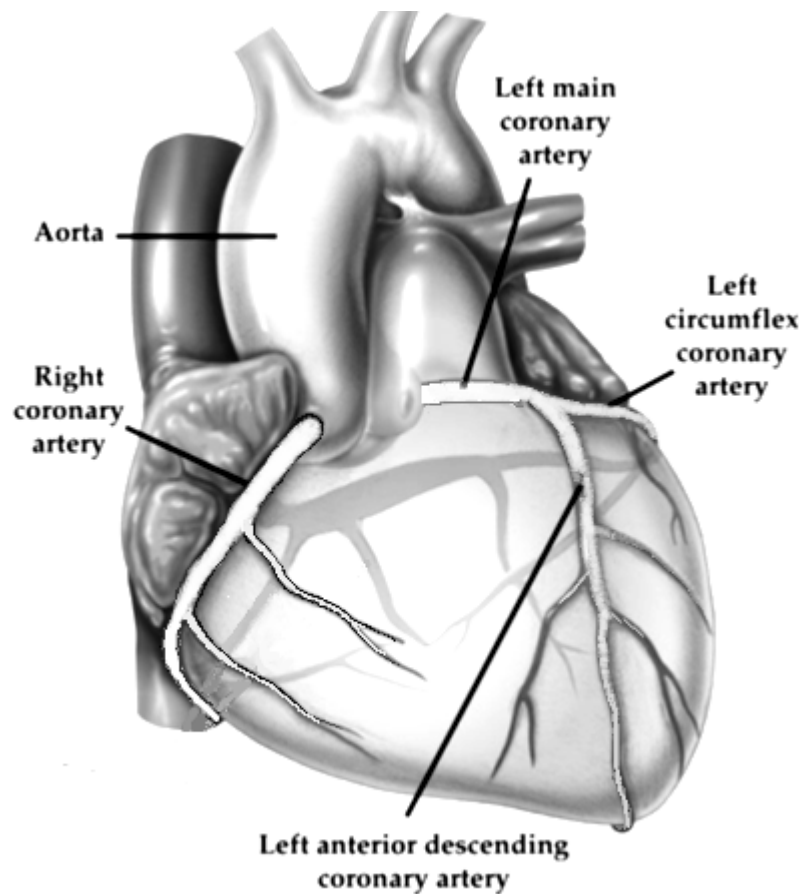
through the tricuspid valve to the right ventricle. It is then pumped through the pulmonary valve into the lungs to receive oxygen. Oxygen rich blood enters the left atrium then passes through the mitral valve into the left ventricle. The left ventricle pumps the blood through the aortic valve in to the aorta to circulate to the rest of the body. Valves act as one way doors allowing forward flow of blood.

The heart has its own electrical system (pacemaker) to coordinate the contraction and relaxation of the heart muscle.



The electrical system coordinates the pumping action of the heart's 4 chambers

Coronary arteries lie on the outside of the heart and carry oxygen rich blood to the heart muscle. The major coronary arteries are the right coronary artery, the left main coronary artery, left anterior descending artery and the circumflex artery.





## Coronary artery disease (CAD)

Your coronary arteries can become narrowed or blocked by formation of plaque which is calcium and fatty deposits (cholesterol). Shortage of supply in fuel causes pain in the chest, throat, jaw, arms or between the shoulder blades (angina), shortness of breath and nausea. In more severe cases, it may cause a heart attack, heart failure or heart rhythm abnormalities.

## Risk factors for coronary artery disease

Risk factors you cannot control:

- Gender:
  - Men generally develop CAD ten years earlier than women.
  - Women may have higher risk of developing CAD:
    - After menopause.
    - Taking estrogen as part of Hormone Replacement Therapy.
    - History of gestational diabetes.
    - History of pre-eclampsia.
- Age:
  - People older than age 65 are more at risk to develop CAD.
  - The older you are, the higher your risk of CAD.
- Family history:
  - One or more of close relatives have or had early CAD (for men, younger than 55; for women, younger than 65).
  - Inherited lipid disorders.
- Indigenous heritage:
  - First Nations, Metis and Inuit peoples are more likely to have high blood pressure and diabetes.
- Ethnicity:
  - People of African or South Asian background are more likely to have high blood pressure and diabetes.

## Risk factors for CAD you can control

Risk factor	Goal	Management
<p><b>High blood pressure</b></p> <ul style="list-style-type: none"> <li>○ Make your heart work harder.</li> </ul>	<p>In general, 130/80 or lower.</p> <p>Talk to your health care provider about your blood pressure goal.</p>	<p><a href="#">Balanced diet</a>  <a href="#">DASH diet</a>  <a href="#">Alcohol in moderation</a>            Exercise            Smoking cessation            Medications</p>
<p><b>High cholesterol</b></p> <ul style="list-style-type: none"> <li>○ Develop fatty deposits and narrow the arteries.</li> <li>○ These deposits may break and form a clot.</li> </ul>	<p>LDL cholesterol:            Less than 1.8mmol/L or</p> <p>Apo B:            &lt;0.8g/L or</p> <p>Non-HDL-C:            &lt;2.6mmol/L</p>	<p><a href="#">Mediterranean diet</a>            Low glycemic index diet            DASH diet            Healthy weight            Exercise            Smoking cessation            Medications</p>
<p><b>Diabetes</b></p> <ul style="list-style-type: none"> <li>○ Harden and narrow coronary arteries.</li> </ul>	<p>HbA1C less than 7.0.</p>	<p><a href="#">Low glycemic index diet</a>  <a href="#">Exercise</a>            Quit smoking            Medications</p>
<p><b>Unhealthy weight</b></p> <ul style="list-style-type: none"> <li>○ Tendency to high blood pressure and high blood lipids.</li> <li>○ Higher risk for obstructive sleep apnea (known risk factor for CAD).</li> </ul>	<p>A waist-to-hip ratio less than 1.0. Ideal ratio is</p> <ul style="list-style-type: none"> <li>○ Less than 0.9 for men</li> <li>○ Less than 0.85 for women</li> </ul> <p>Ideal waist circumference (varies depending on ethnicity).</p> <ul style="list-style-type: none"> <li>○ Less than 94cm for men</li> <li>○ Less than 80cm for women</li> </ul>	<p><a href="#">Weight management</a></p>

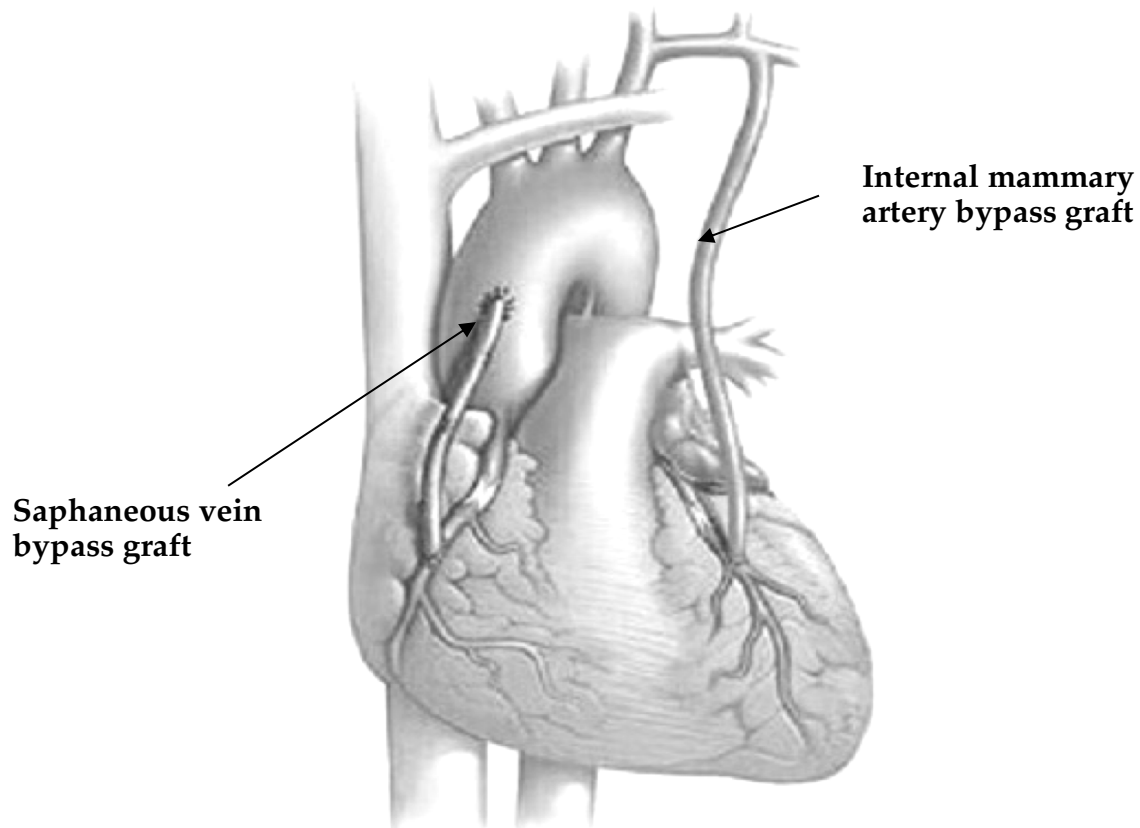
<p><b>Smoking</b></p> <ul style="list-style-type: none"> <li>○ Cause the platelets to clump.</li> <li>○ Cause spasms in your coronary arteries.</li> <li>○ Lower good cholesterol.</li> <li>○ Cause irregular heart beats (arrhythmia).</li> </ul>	<p>Smoking cessation</p>	<p><a href="#">BC Smoking Cessation Program</a></p> <p><a href="#">Quit now</a></p> <p>Talk to your community pharmacist about accessing to the government supported program.</p>
<p><b>Inactivity</b></p> <ul style="list-style-type: none"> <li>○ Being active can help control blood pressure, weight, and blood sugar.</li> <li>○ Being active raises good cholesterol levels.</li> </ul>	<p>Accumulative of at least 150 min of moderate to vigorous intensity aerobic physical activities per week, in bouts of 10min or more.</p> <p>At least two days per week of muscle and bone strengthening activities.</p>	<p>Moderate intensity activities</p> <ul style="list-style-type: none"> <li>- Brisk walking</li> <li>- Cycling</li> <li>- Swimming</li> </ul> <p>Vigorous intensity activities</p> <ul style="list-style-type: none"> <li>- Jogging</li> <li>- Tennis (singles)</li> <li>- Aerobic dancing</li> </ul> <p>Muscle and bone strengthening activities</p> <ul style="list-style-type: none"> <li>- Push-ups</li> <li>- Pull-ups</li> <li>- Sit-ups</li> </ul> <p><a href="#">Tips to get active (adults)</a></p> <p><a href="#">Tips to get active (older adults)</a></p>
<p><b>Stress</b></p> <ul style="list-style-type: none"> <li>○ Race your heart.</li> <li>○ Elevate blood pressure.</li> <li>○ Weaken immune system.</li> </ul>	<p>Find the ways to cope.</p> <p>Learn ways to relax.</p>	<p><a href="#">Mindfulness exercises</a></p> <p><a href="#">Breathing exercise</a></p> <p><a href="#">Managing your time</a></p>

## Coronary artery bypass graft (CABG)

Coronary artery bypass graft surgery re-routes blood flow around one or more blockages in the coronary arteries. This restores blood supply to the heart muscle. Arteries or veins can be used as bypass graft.

The arteries used are the internal thoracic artery located inside the breast bone and the radial artery located in the forearm. The most commonly used vein is the saphenous vein, located in the leg.

The coronary arteries are not removed because they may still carry small amount of blood to the heart muscle.



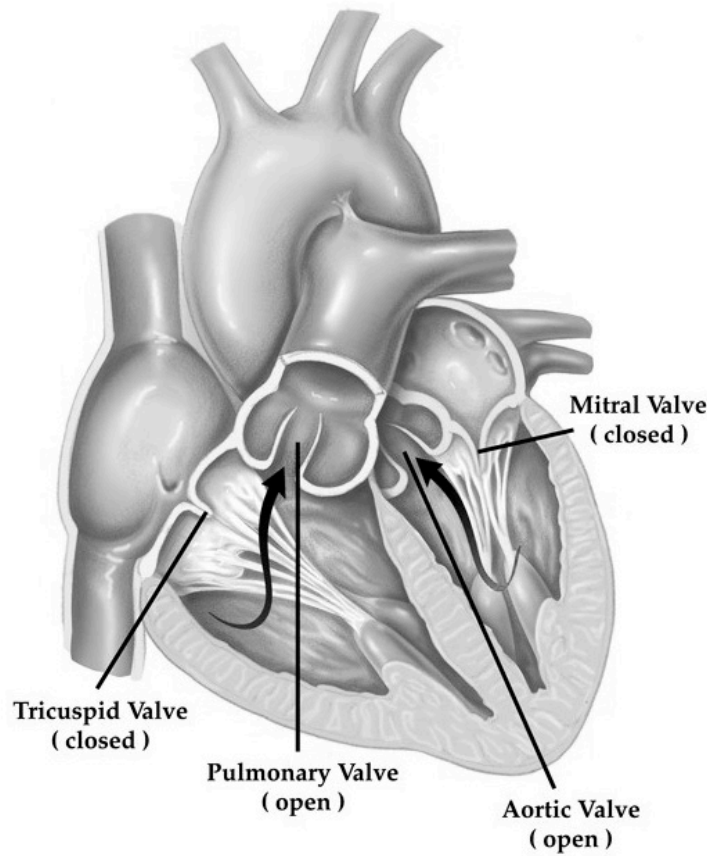
## **Heart valve disease**

Heart valve disease occurs when the valve(s) do not open or close properly. Any of the four valves can be affected. Several conditions may damage the valves, including birth defects, infection, rheumatic fever, inherited conditions and coronary artery disease.

The narrowing of the valve is called stenosis. When the valve becomes very stenotic, the amount of blood pumped through the valve may be reduced. As the rest of the body may not receive adequate blood supply, people with valve stenosis may feel dizzy, short of breath, chest pain or tired.

The other type of valve disease is called insufficiency. This occurs when the valve does not close completely, causing backflow of the blood. This may cause you to cough or feel short of breath. Blood can also back up into other areas of your body causing swelling.

Some people develop heart rhythm issues with heart valve disease.



## Heart valve surgery

Depending on the condition of the valve, sometimes it can be repaired but if it is very abnormal, it typically is replaced.

Replacement involves removing the old valve and placing a new artificial (prosthetic) valve in its place. Prosthetic valves are either mechanical or bio prosthetic (tissue). Mechanical valves are made of long lasting metal and they are very durable. Patient with mechanical valves, however, will need to be on an anticoagulant to prevent blood clot formation on the surface of the metal. Bio prosthetic valves come from either a pig or a cow heart. They are not as durable as mechanical valves and sometimes start to fail within 10 to 15 years after implantation. If this occurs, you may need an assessment for further surgery. Tissue valves have low risk of blood clot formation and generally used for older patients.



**Tissue Valve**



**Mechanical Valve**

## Risks of Heart Surgery

Risks	What is it and why?	Management
Bleeding	Major bleeding usually occurs very early after surgery. We monitor drainage from chest tubes to see if there is any evidence of major bleeding.	<p>You may be taken back to the operating room to find the cause of excess bleeding and treat it.</p> <p>You may receive blood transfusions to help control bleeding and replace blood loss.</p>
Confusion (Delirium)	<p>It is a sudden and acute confusion state that affects people's attention, awareness and organized thinking. It is not clear why and how delirium develops.</p> <p>You may feel confused, disoriented or irritable. Some become more withdrawn.</p> <p>You may also hear or see things that are not there (hallucinations).</p> <p>It is common after surgery.</p> <p>Risk is higher if you:</p> <ul style="list-style-type: none"> <li>• have hearing/vision loss</li> <li>• smoke</li> <li>• drink excess alcohol</li> <li>• take sleeping pills</li> <li>• take a pill for anxiety</li> <li>• use illicit drugs</li> <li>• have early memory loss</li> <li>• are older</li> <li>• have multiple medical issues</li> </ul>	<p>Speak with your nurse or doctor if you have risk factors.</p> <p>Wear glasses/hearing aids if you use them at home.</p> <p>Pain management is important – tell your nurse if your pain is not well controlled.</p> <p>You may be given a medication to help through the process and reduce the symptoms.</p> <p>Generally the confusion passes within 3 to 4 days. But some people take longer to resolve.</p> <p><u>For family member:</u> Delirium is distressing for both patient and family. Some tips to help:</p> <ul style="list-style-type: none"> <li>• Tell the nurse or doctor if you noticed the changes in patient's cognitive function.</li> <li>• Bring familiar items from home.</li> <li>• Avoid over stimulation.</li> </ul>



	<ul style="list-style-type: none"> <li>• have a history of delirium</li> <li>• had a long operation</li> </ul> <p>Delirium may be associated with</p> <ul style="list-style-type: none"> <li>• poor sleep</li> <li>• dehydration</li> <li>• infection</li> <li>• pain</li> </ul>	<ul style="list-style-type: none"> <li>• Encourage patient to eat and drink.</li> <li>• Encourage patient to mobilize.</li> <li>• Maintaining sleep-wake cycle is important. Avoid long naps during the day.</li> </ul>
Atrial fibrillation	<p>It is common to have an irregular heart rhythm (arrhythmia) after heart surgery and atrial fibrillation is the most common arrhythmia.</p> <p>It is due to irritation and swelling around the heart. You could have slow or fast heart beats with this.</p> <p>This could still happen after you go home. It is usually temporary.</p>	<p>Tell your nurse if you feel short of breath, nauseated, sweaty, or have chest pain.</p> <p>You may be given medications to control heart rhythm and heart rate.</p> <p>You may need an anticoagulant to minimize the risk of blood clots. Review your benefits and risks of this therapy with your doctor/NP.</p>
Heart rhythm problems	<p>Some patients may have slow heart rate after surgery.</p> <p>It is due to irritation and swelling around the heart, affecting the conduction system of the heart.</p>	<p>A small number of patients require a permanent pacemaker to support a slow heart rate.</p> <p>Your heart rhythm will be monitored closely for several days before the decision about a permanent pacemaker is made.</p>
Urinary tract infection	<p>It is an infection involving the urinary tract – usually the bladder and the urethra.</p>	<p>Tell your nurse if you have any of the following symptoms:</p> <ul style="list-style-type: none"> <li>• burning sensation with urination</li> <li>• urge to urinate</li> </ul>

	Using a tube to drain the urine for surgery is associated with increased risk of urinary tract infection.	<ul style="list-style-type: none"> <li>• strong smelling urine</li> <li>• cloudy urine</li> <li>• blood in urine</li> <li>• frequent urination</li> </ul> <p>It is usually treated with antibiotics. Ensure you take the entire course of antibiotics as prescribed.</p>
Infection on the incision  Arm Leg Sternum	Surgical procedures are associated with a risk of infection.	<p>It is important to monitor your incision periodically. Watch for:</p> <ul style="list-style-type: none"> <li>• Drainage from incision especially green or pus, or foul smelling fluid</li> <li>• Fever and chills</li> <li>• Increasing redness and/or warmth along incision</li> <li>• Increasing pain along incision</li> <li>• Edge of incision coming apart</li> </ul>
Stroke	Stroke may occur because of debris coming out of the heart causing an injury to the brain.	<p>Management of stroke depends on the type and the size of stroke.</p> <p>In general, you will be assessed by a specialist. You may need rehabilitation before and after you go home.</p>

## Preparing for Surgery

### **If you are not feeling well before surgery**

- Call your primary care provider or cardiologist/internist if your heart symptoms change or worsen.
- If you have significant changes to your symptoms, ask someone to take you to the nearest emergency department or call 911.

Please remember that sometimes it is necessary to change your surgery date and times. If this should happen, you will be given as much notice as possible and your surgery will be rebooked.

These changes can take place even on the day of your surgery.

### **Checklist for preparing for surgery**

- ❑ Make an appointment with your primary care provider for pre-op physical.
- ❑ See your dentist for a checkup if you are having heart valve surgery.
- ❑ Stop smoking, drinking alcohol or using illicit drugs at least three weeks before surgery.
- ❑ Check your medication coverage status
  - [Fair pharmacare](#)
- ❑ Discuss your health care wishes with your family in case you suffer major life threatening postoperative complications.
  - [My Voice](#)

### **Items to pack for your hospital stay**

- ❑ Family/friend to bring to 3 North West **after surgery**
  - Loose fitting, wrap around housecoat
  - Women: Comfortable bra with no underwire. You may need a larger size one as people usually have fluid retention after surgery.
  - Reading material
  - Loose clothing and sturdy shoes to wear home

## **Planning for Discharge**

Early discharge planning helps your transition from the hospital to your home as safe and smooth as possible. Most patients are discharged between four to seven days after surgery. Most patients do not require home nursing care after discharge because you will be independent with bathing, toileting, mobility and dressing. You may need support with transportation and household chores. Your care team will review the need for any equipment prior to discharge.

Make arrangements for:

- ❑ Transportation to the hospital on the day of surgery.
- ❑ Transportation on the day of discharge. The hospital is not responsible for transportation home even if you were transferred for surgery by ambulance.
- ❑ Somebody to stay with you the first few nights after discharge.
- ❑ Somebody who can help you with the following for the first few weeks:
  - meal preparation
  - housekeeping
  - laundering
  - grocery shopping
  - taking care of pets

For more information about the community resources, see the link below (Victoria and surrounding areas):

- ❑ [Seniors Serving Seniors](#)

Talk to your primary care provider about resources in your community.

## Skin preparation

Cleaning your skin before surgery helps to remove germs on the skin, to prevent infection and to help incisions heal.

Do not remove any hair from your surgical area for at least one week before your surgery. If hair removal is needed, it will be done by the nurse after you are admitted.

### **The evening before surgery:**

1. Remove all jewelry, including body piercings. Wash hair with usual shampoo and rinse.
2. If showering, wet all of the body then move the showerhead to the side to minimize soap loss during lathering with chlorhexidine (CHG) 4% sponge.
3. If bathing, place a minimum amount of water in the tub so that the body can be soaped with the CHG sponge without washing away the suds. Sit down in the bath, being careful not to slip.
4. Open one CHG sponge and wet with a little water. Squeeze repeatedly to produce suds.
5. Wash body from neck to feet using the sponge. Avoid contact with the eyes, inner ear and mouth. If CHG gets into the eyes, rinse well with water.
6. Carefully wash the surgical area, armpits, navel, feet and in between toes (be careful not to slip), and back, and finish with genital and anal areas. Do not rinse until your entire body has been washed and the lather has been on your skin for at least 2 minutes.
7. Rinse the body thoroughly under the shower or in the bath.
8. Use a fresh, clean dry towel to dry the skin from head to toe, finishing with the genital and anal areas.
9. Do not apply deodorant, body lotion, cosmetics, or powder afterwards. Dress in clean clothes. Do not put jewelry or piercings on.

## Sternal Precautions

### **POST-OPERATIVE STERNAL PRECAUTIONS**

*PREFORM WITHIN THE FIRST 6-8 WEEKS POST-OP*

***Getting out of bed: Step 1***

In a laying position have arms and legs flat, with the bed as low as tolerable



***Getting out of bed: Step 2***

Have knees bent and raised with arms crossed over chest. Roll to the edge of the bed using your legs



***Getting out of bed: Step 3***

At the edge of the bed, move your top hip and shoulder as far over as possible.



***Getting out of bed: Step 4***

Use your **palm** to push off the bed while keeping your other arm raised and firmly across your chest.



***Getting out of bed: Step 5***

Scoot to the edge of the bed with your buttocks, and stand up with your nose to your toes and your legs bent as far down as tolerable



***Sitting to Standing with a Walker***

Cross arms across chest, do not grab the walker, stick buttocks out and have knees bent, stand up straight and grab the walker



## Sternal Precautions

**6-8 weeks after surgery** (unless surgeon tells you otherwise)

- ❑ **NO pushing or pulling more than 5lbs (2kg)**
  - e.g. no pushing up from chair or opening doors; refer to your book for details on gardening, grocery and housekeeping tasks.
- ❑ **NO lifting more than 5 lbs (2kg)**
  - e.g., about the weight of a bottle of milk.
- ❑ **NO using of one arm to reach behind your back**
  - e.g., when tucking in your shirt or putting your wallet in your back pocket; twist at your hips to turn your whole upper body to wipe after toileting.
- ❑ **NO raising of your arms above shoulder level for long periods of time**
  - e.g. screwing in a lightbulb, blow drying hair
  - You can raise your arms together with your hands clasped once your pacer wires are removed.
- ❑ **NO driving until your doctor says it's ok (usually 6 weeks)**
  - Ask your doctor when you can drive again at your 6 week follow up appointment.



**5 lbs**

## **The Day of Surgery**

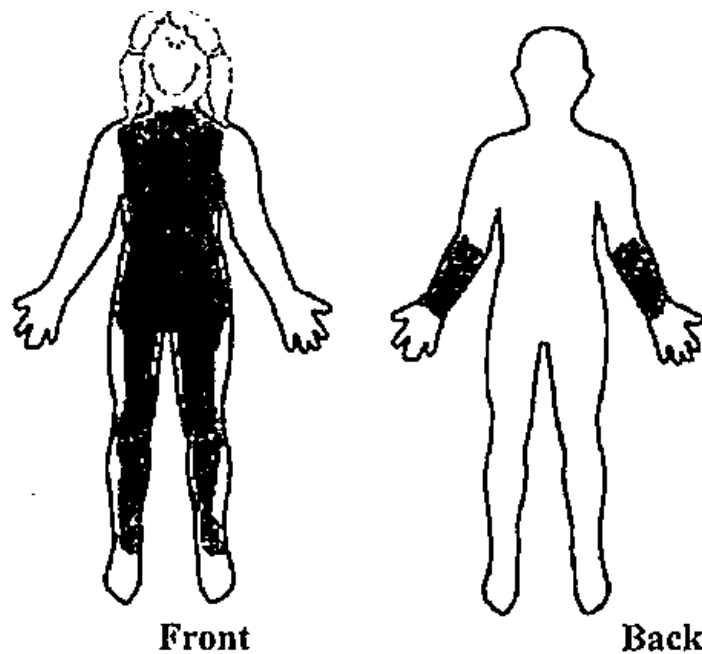
- ❑ Bring the items as per the list given to you at the preoperative orientation.
- ❑ Arrive at the Patient Care Centre as instructed at the preoperative orientation.
- ❑ Do not wear perfume, aftershave or other scented products, make-up, or nail polish.
- ❑ Leave all jewelry or body piercing items at home. If the rings cannot be removed, visit a jewellery store to help them removed before surgery or they will need to be cut off.

### **Before surgery**

- ❑ Hair may be clipped if needed.
- ❑ You will take another shower with an antiseptic sponge.
- ❑ If you are alone, the staff will put your belongings in a storage locker.

### **Hair clipping before surgery**

(Will be done before surgery after you are admitted)





## Information for the Family

- **Leave the contact person's information with the nurse. All other family and friends must call the contact person to receive information on the patient's progress.**
- Family may stay with the patient until he/she goes for surgery. Take patient's belongings home and bring them back after surgery.
- Heart surgery usually takes 4-6 hours and sometimes longer. Family members are encouraged to go home or the place they are staying.
- The surgeon will call the contact person after surgery. Family members may come to the hospital about one hour after getting the call from the surgeon. No more than two visitors in CVU.
- Avoid calling CVU or 3NW between 7:00-9:30 am and 7:00-9:30 pm.
- Limit visitors. This helps the patient get enough rest. The best time for a visit is the meal time. Overnight family stays are discouraged.

### Visiting Hours

**CVU:** 24 hours except for between 7 and 8 am/pm, for a short visit.

**3NW:** From 8 am to 8 pm except for 1:00-3:00 pm (rest period).

## **Hospital Conveniences**

**Television:** Bedside television is available for rent (you will need a credit card at the time of rental).

**Phones:** Courtesy phone is available in the Sun Room. Cell phones may be used on the ward.

**Computer:** Courtesy computer is available in the Sun Room. We do not have wireless internet at this time.

**Gift Shop:** It offers reading materials, personal items, gifts and cards.

**Pharmacy:** It is located on the main floor of the D&T building across from outpatient clinics.

**Cafeteria:** Food court is available on the main floor of the PCC building.

## What to Expect After Surgery

### Day of surgery

- You will be moved to the Cardiovascular Unit (CVU) after surgery.
- Pain medications will be given continuously. Tell your nurse if they are not helping.
- You may feel groggy or disoriented. This is common.
- Later in the day, your nurse or physiotherapist may help you sit up at the side of the bed.

Tubes and lines you may have immediately after surgery:

- **Breathing tube:** This is connected to the breathing machine to help you breath after surgery. It will be removed in 1 to 6 hours after surgery once you are awake and can breathe on your own. You will be able to talk once the tube is out.
- **Heart monitor:** Electrodes (sticky patches) are attached to your chest to monitor your heart rhythm continuously. This is usually discontinued 3 to 4 days after surgery.
- **Pacing wires:** They will be placed during your surgery. You may be connected to a temporary pacemaker if the heart rate is slow.
- **Intravenous lines:** A few lines may be in place including one in your neck and in one or both of your arms. These are used to measure pressures of your heart and to administer fluids and medications.
- **Chest tubes:** Tubes will be placed during your surgery in your chest to drain fluid and blood from around the heart and lungs. They are usually removed within 3 days after surgery.
- **Bladder catheter:** A thin tube is placed in your bladder to collect and measure urine. Once you are able to get up, the tube will be removed (usually two to three days after surgery).

## **Post-op Day One (day after surgery)**

- You will have a blood test, electrocardiogram (ECG) and chest X-ray.
- You will start drinking fluids.
- Pain medications will be given regularly.
- Start using inspirometer as instructed.
- Oxygen will be given through a tube placed inside your nose.
- You will sit up or stand at the bedside with assistance. Remember to use sternal precautions.

## **Recovering on the Ward**

You may be moved to 3 North West in the Patient Care Centre if your breathing tube is removed and you no longer require continuous monitoring or certain drugs. While you are on the ward, you will be cared for by a nurse practitioner (NP) in conjunction with your surgeon.

On the ward:

- The ward team will come to your bedside for a team round most days of a week to discuss your progress and discharge planning.
- You may start regular meals on post-op day two. It is important to be fully awake and sitting upright in bed or preferably in the chair before eating solid food. Your swallowing may take a few days to return to normal after surgery.
- Weight is monitored daily to determine the amount of fluid your body is retaining.
- Ensure your pain is well managed so you can do breathing exercises/cough and walk. Let your nurse know if medications are not relieving your pain.
- Continue to increase your walking.
- Continue to use your inspirometer every hour.
- You may shower on post-op day three or four.
- The temporary pacing wires will be removed before discharge, usually on post-op day four. You will need to stay in the hospital for four hours after pacing wires are removed.

## **Breathing and Leg Exercises**

After any type of surgery, the lungs tend to produce more mucous and do not expand fully. Deep breathing and frequent coughing help keep the lungs fully expanded and clear of mucous. Using incentive spirometry will help with re-expanding the lungs fully and clear mucous.

### **Incentive Spirometry – Repeat 5 to 10 times every hour while awake**

An incentive spirometer is a device used to help encourage deep breathing exercises. You will get one when you go to the Preoperative Orientation.

- Breathe out completely.
- Seal your mouth around the mouthpiece and breathe in as much air as you can.
- Keep the ball suspended as long as you can (5-15 seconds).

### **Leg Circulation – Repeat 10 times**

Moving your legs in bed helps to maintain good blood circulation, lessen muscle loss and decrease swelling in the legs:

- Pump the feet up and down at the ankles.
- Make circles with the feet in each direction with the legs straight.
- Pull toes up and press the back of your knees down into the bed. Hold for three seconds and relax.
- Bend one knee and straighten it. Alternate legs.

## Common Issues after Surgery

Issues	What to expect and what can I do
Trouble sleeping	<p>It is a very common issue after surgery. It will improve over the first few weeks.</p> <ul style="list-style-type: none"> <li>▪ Take a pain pill at bedtime</li> <li>▪ Keep your usual sleep schedule</li> <li>▪ Avoid long naps</li> <li>▪ Limit caffeinated drinks to morning only</li> <li>▪ You may sleep on your side if it is more comfortable (avoid sleeping on your stomach for 6-8weeks)</li> </ul>
Poor appetite	<p>Usually slowly resolves over 4-6 weeks.</p> <ul style="list-style-type: none"> <li>▪ Family can bring food from outside of hospital – ask your nurse about any food restrictions</li> <li>▪ Try small and frequent meal</li> <li>▪ Talk to a dietitian (also available through 811 on weekdays between 9am and 5pm)</li> </ul>
Fatigue	<p>It takes 6-12 weeks to feel back to normal.</p> <ul style="list-style-type: none"> <li>▪ Plan your day in the morning and keep to a routine</li> <li>▪ Rest 20-30min between activities</li> <li>▪ If you need to rest more than one hour, you may be overdoing it</li> <li>▪ Use the exercise log to keep track of your activity level and find a good balance between exercise and rest</li> <li>▪ Avoid long periods of inactivity</li> </ul>
Constipation	<p>It is important to keep routine bowel movements to avoid straining.</p> <ul style="list-style-type: none"> <li>▪ Increase fiber in your diet (fruits, vegetable, whole grain and bran)</li> <li>▪ Be as active as possible</li> <li>▪ Drink fluids (water) if you are not on fluid restriction</li> <li>▪ Talk to your health care provider about laxatives</li> </ul>
Numbness and tingling	<p>This happens when nerves get bruised and overstretched during surgery.</p> <p>If your chest wall artery was used for bypass, you may have some numbness or increased skin sensitivity over the chest wall. It may also occur around your arm/leg incisions.</p> <p>It typically resolves over time.</p>

Clicking breastbone	<p>This can happen when the breastbone moves and is not yet stable. It will get better as your breastbone continues to heal over a few weeks.</p> <ul style="list-style-type: none"> <li>▪ Tell your health care provider if clicking is significantly worse and causing significant pain</li> </ul>
Lump at the top of the breastbone	<p>This is normal and will get better over several weeks.</p> <ul style="list-style-type: none"> <li>▪ You may take a pain pill if you are uncomfortable</li> <li>▪ Otherwise you do not need to do anything</li> </ul>
Blurry vision	<p>This is common and usually resolves very quickly after surgery.</p> <ul style="list-style-type: none"> <li>▪ If symptom continues over three months, have your eyes tested</li> </ul>
Swelling of the legs and ankles	<p>It is normal particularly if a vein has been used. It will get better as you increase your activity.</p> <ul style="list-style-type: none"> <li>▪ Avoid crossing your legs or sitting in one position for a long period</li> <li>▪ Raise your legs with a pillow when resting</li> <li>▪ Put your legs on a stool when sitting</li> <li>▪ If your swelling is getting worse, and/or you develop pain in your calves, see your primary care provider as soon as possible</li> </ul>
Harsh voice	<p>Having a tube down your throat may cause swelling in your throat. Your voice will be back to normal within first few weeks.</p> <ul style="list-style-type: none"> <li>▪ If this does not improve beyond 6 months, you may need to see a specialist. Talk to your primary care provider.</li> </ul>
Pleural effusion	<p>It is a collection of fluid around your lung(s) resulting from inflammation due to the surgery itself.</p> <ul style="list-style-type: none"> <li>▪ It usually does not require treatment because the fluid usually reabsorbs over time.</li> <li>▪ If it is a large fluid collection, it may make you feel increasingly short of breath. If it is large, we may drain it with a small tube.</li> </ul>

## Going Home after Surgery

### **When Can I Go Home?**

You may be ready for discharge as early as post op day four. The following criteria are used to determine your readiness to go home.

- You no longer need oxygen.
- Your heart rhythm is stable.
- Your pacing wires are removed.
- Your day four blood tests and chest x-ray are satisfactory.
- Your bowels have moved.
- You are able to shower, dress and get in and out of bed on your own.
- You are able to climb the stairs (if you need to climb them at home).
- You have arranged for help at home.
- You had anticoagulation teaching if you are on anticoagulants.
- Your INR is satisfactory if you are on Warfarin.
- You and your family watched the discharge video.

**Discharge time is usually before noon** unless otherwise indicated by your doctor/NP. Sometimes the decision is not made until the morning of potential discharge itself. Your ride must be available to pick you up on short notice. Talk to your doctor/NP if you need longer notification.

Discharge process takes approximately 30 minutes to one hour, sometimes longer. It is advisable to watch the discharge video the day before discharge.

### **Discharge checklist**

- This booklet
- Your belongings
- Discharge prescription
- Follow up appointment instructions
- Staple remover (if you have staples)
- Requisition for follow up tests (if advised by your doctor/NP)
- Temporary valve card (if you had valve surgery)

If you are traveling a long distance to home, stop every 60-90 min for a short walk. You may sit in the passenger seat.

## Recovering at Home

### Dressing

- Choose loose-fitting clothing to allow your incision to “breathe” and as they are easier to put on and take off.
- Dress while seated.
- Use a stool or long handled equipment (reacher, sock aide, shoe horn) as needed to help.
- Do not reach behind you to put on your coat, robe, shirt or front closure bra.
- Keep your arms in front of you and reach across your body to pull items around your back or neck. Try keeping your elbows pointing in front of you or towards the ground.



1. Place both arms through sleeves.



2. Use one arm to place head through the opening. Keep the arm tight to your body.



3. Push fabric over your shoulder by reaching across your body.



4. Adjust the shirt by reaching across the front of your body and pulling on the front and sides of the shirt.



## Care of your incision

- If your incision has drainage, your nurse will give you instructions about care at home.
- We will arrange home nursing care if you have complicated dressings.
- If you still have chest tube stitches, your primary care provider may remove them after at your initial check up visit.
- A clear yellow or slightly bloody drainage from your incision or chest tubes sites is normal. It can continue for the first 2 weeks at home.
- Avoid touching, rubbing or scratching your incision. Itchiness is a normal part of the healing process.
- Do not apply oils, creams or lotions to your incision unless your doctor tells you it is okay.
- Bruising and pain around your incisions will get better over the next few weeks.
- Protect your incision from the sun for one year. Sunlight may cause your scar to become darker and more visible.
- Wear clothing that will allow your incision to “breathe”.
- It is okay to get the incisions wet. Let the water run over the areas rather than washing them directly. It is not necessary to use anti-bacterial soap.
- Avoid aiming the showerhead at your incision (i.e., shower with your back to the shower head).
- Gently pat the incision with a clean towel. Do not rub the area.
- Apply a new dressing only if the incision is draining or if you want to protect the wound from rubbing on your clothing.
- Avoid soaking your incision in a bath or hot tub for 6 weeks or until it is completely healed. You cannot use your arms to get in and out of the tub for 6 weeks.

## Bathing

- You cannot use your arms to get in and out of the tub for 6-8 weeks.
- Shower/bathe in a seated position to save energy and reduce risk of falling – consider a shower/bath seat.
- It is safe to raise your arms to wash your hair - keep your elbows pulled in towards your chest.
- Consider grabs bars in your tub or shower enclosure.



**Shower**



**Bathtub**

## **Alcohol**

- Avoid alcohol for at least 2 weeks after surgery. After that, alcohol may be consumed in moderation (max: 3 drinks a day or 15 drinks a week for men and 2 drinks a day or 10 drinks a week for women).
- Many medications react to alcohol. Talk to your pharmacist about interactions alcohol may have with your medications.
- Avoid alcohol if you have a history of depression. Alcohol is a depressant and may make your symptoms worse.

## **Driving**

- You must not drive for 6 - 8 weeks after surgery. Your car insurance may be invalid if you are involved in an accident.
- At your 6 week follow-up visit, ask your cardiologist/internist when you can start to drive.
- Wear your seat belt at all times.

## **Returning to work**

- Expect to be off work for 6-12 weeks depending on your job. Talk to your cardiologist/surgeon about a return to work date. The length of time you will be off is determined by your recovery and the type of job you do.

## **Travel**

- Ask your cardiologist/internist or primary care provider about when it is safe to travel.

## Feelings and emotions

Surgery is a major event that emotionally and physically affects patients and their families. Fear, sadness, anxiety, anger, frustration, mood swings or depression can happen before surgery, during or after surgery. This is normal.

These feelings can last for a few days or sometimes a few weeks. They often go away as you begin to feel more confident and secure in your daily life.

Recovery is better when feelings are identified and dealt with early. You can help yourself by:

- Eating well, exercising within your limits and getting plenty of rest.
- Talking about your feelings with your family and friends.
- Talking with the Cardiac Social Worker or Spiritual Care Worker. If you or your family would like to talk to someone about your concerns, please tell your nurse.
- Talking to someone who has had similar surgery.
- Talking with your primary care provider if you feel “blue” or have feelings that concern you for 2 weeks or more.

## Family and Friends

Heart surgery is stressful for all people who love and care for you. At times, family and friends can become overprotective. They can “take-over” in their attempts to help. This is because they are afraid and worry that they might not be doing enough for you. They may unintentionally take away your independence and lessen your confidence. Although they mean well, family and friends need to balance their own feelings while trying to support your recovery.

## Strategies you can use to help your recovery

- Appreciate the worry and care that others are providing.
- Tell your family and friends that you will tell them if you have any physical or emotional concerns that are worrying you.
- Accept help from others.
- Limit visitors and screen phone calls.

- Set up your own visiting hours at home.
- Begin visits by telling your company you will let them know when you are tired and need to rest.
- Do not be afraid to say “no, not today, thanks” to people wishing to drop in to see you.
- Use email or the telephone answering machine to update friends on your progress.

### **Strategies your family and friends can use to help you recover:**

- Be patient– it is not unusual for their loved one to have good and bad days.
- Share their feelings with a close friend.
- Talk to their primary care provider if they have feelings that are concerning them.
- Take care of own health. Eat well, exercise and get plenty of rest. They can rest when you rest.
- Do something they enjoy and find relaxing. You can be left alone.

### **Dealing with stress**

Learning to live with a heart condition can be stressful. Your emotional health affects your breathing and your heart. It is important and helpful to find a way to relax.

### **Learn progressive relaxation techniques**

- Recognize stressful situations that make your body over-react. You can learn to control your body response to stress and feel less exhausted and fearful.
- Reduce time urgency. Slow down. Pace, don't race.
- Decide which activities you enjoy and those which you must do, then weed out anything that does not fit into one of these two areas.
- Look at your “must do” list and see what you may be able to ask someone else to do.
- Allow plenty of time to get things done. Take mini breaks.

- Get some exercise

### **Practice acceptance**

- Instead of worrying about “what will happen if...” try to asking yourself “will whatever is happening matter next week? Tomorrow?” If it will make a big difference, then it deserves your coolest, calmest approach.
- Watch out for perfectionism. Set realistic goals. If someone else does the job differently than you would have, ask yourself if your way is really the only way. Take a shortcut once in a while. Use your energy for activities you enjoy.

### **Find humour in it**

- Try to find some humour in a situation. If everything were perfect, life would be quite boring. So laugh at yourself. Loosen up and enjoy life.
- Unwind by taking a stroll, watching a sunset, talking with a friend, or listening to music.

### **Find a quiet place and time of your own**

- Create a mental image in your mind that you find peaceful and relaxing. Take a few minutes several times a day to imagine this place.
- Mental relaxation can create a physical change in your body. It slows the breathing, relaxes muscles and lessens anxiety.

### **Have realistic expectations**

- All of us need to adjust our expectations of ourselves from time to time. This is particularly true as we age and if illness limits our activities. Develop a realistic schedule of activities, including time for recreation.
- Understand your sources of stress and change the ones you can. Learn ways to control negative emotions. Get help to deal with anger or problems rather than allowing them to build.
- Friends can be good medication. Conversation, regular social outings, and sharing thoughts can reduce stress.

## **Activity and Exercise**

The time takes to return to a normal activity level will vary greatly, depending on your age, your energy level and your previous health and fitness levels. The goal for the first 12 weeks is to pace your recovery. Rest and activity periods should be balanced and spaced throughout the day.

### **In general**

#### **Protect your breastbone**

- Avoid lifting, pushing and pulling more than 5 lbs. (2 kg) for 6 weeks.
- For 6 weeks avoid activities that require you to:
  - use only one arm or reach behind your back
  - keep your arms above shoulder level for any length of time

#### **Stairs and hills**

It requires more energy to climb stairs or hills. Take your time and rest when you need to.

- Avoid uneven ground and beach walking for 4-6 weeks and until your balance and endurance improves.

#### **Exercise and eating/drinking**

- Exercising right before a meal may interfere with your appetite. Wait 1-2 hours after a large meal before exercising. It is okay to walk slowly after eating a snack.
- Avoid coffee and alcohol before exercising. Make sure you keep hydrated. Try to drink fluid every 20 minutes during your exercise.

## Exercise program for the first 12 weeks

Your body is in the process of healing for the first 12 weeks after surgery. During this time, exercise is very helpful in improving your general strength and endurance and preventing the problems from not being active. Plan to exercise at a time when you feel rested.

**Your exercise program for the first 12 weeks will include 2 things:**

- 1. Warm-up and Cool-down**
- 2. Cardiac Walking Program**

### What you need to do

1. Start with some warm up/cool down exercises (p. 40).
2. Continue with warm-up by walking slowly for 5-10 minutes.
3. Do Cardiac Walk (p. 43). Use the **Talk Test** and **Rate of Perceived Exertion (RPE) Scale** to keep your effort in a safe range (p. 47).
4. Cool down at the end of your walk with another 5-10 minutes of slow walking.
5. Repeat some of the warm up/cool down exercises.
6. Rest for 5-10 minutes. It is okay to feel tired, but not exhausted. You should feel refreshed after resting and able to continue your normal activities.
7. Check your heart rate and record it, along with your RPE in your Exercise Log.

**Exercise is like medication –it must be taken in the right amount.**

**Too much or too little exercise is not good for you!**



## Warm-up and cool-down exercises

A warm up and cool down routine uses a combination of exercises and slow walking.

### Benefit of a warm up:

- Gradually increases your heart rate to a workout rate
- Decreases risk of injury
- Increases range of motion
- Helps relax muscles
- Mentally prepares you for exercise

### Benefit of a cool down:

- Gradually brings your heart rate and breathing back to normal
- Helps prevent pooling of blood in legs
- Helps relax muscles
- Helps prevent stiffness after physical activity

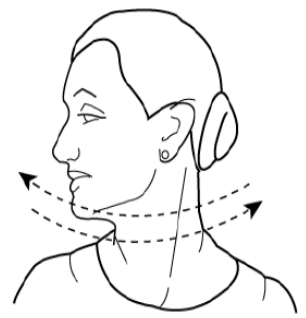
- Sit tall on a firm chair with your feet flat on the floor. Try to keep your shoulders back and relaxed. Avoid slumping forward.
- Do these exercises slowly. They should feel comfortable. Do not force any movements. Breathe normally.
- Do 3-5 repetitions of each exercise before starting your walk.

**Neck Stretch #1**

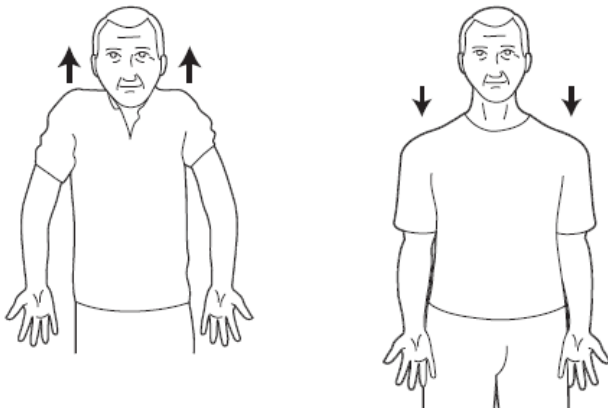
Face forward. Tip your ear toward your right shoulder. Repeat to left side.

**Neck Stretch #2**

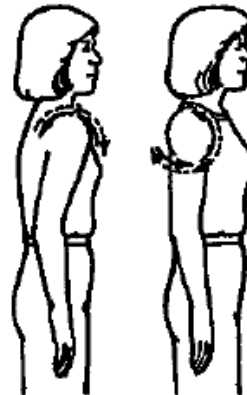
Turn your head to the right side. Repeat to the left side.

**Shoulder Shrug**

Hunch shoulders up towards your ears and then relax.

**Shoulder Circles**

Rotate shoulders backward and then forward.

**Elbow Circles**

Place your fingertips on your shoulders. Make large, full circles with your elbows in either direction.





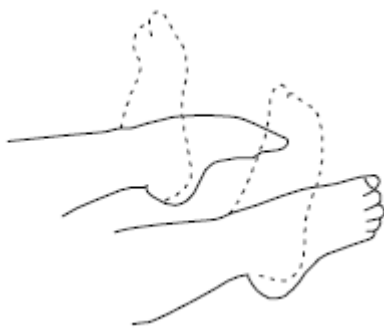
### Arm Raises

**Do not do this exercise until your pacer wires are removed!**

With hands clasped together, raise both arms at the same time as far as you are comfortable then return your hands to the start position.

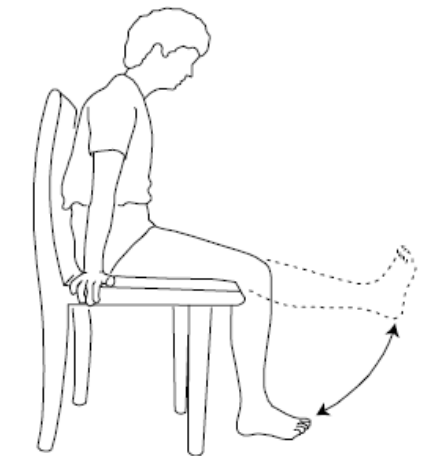
### Ankle Pumps

Sit in a chair. Lift one leg so your foot is slightly off the floor. Move your foot up and down and then in circles both ways. Repeat with other foot.



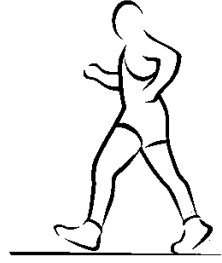
### Knee extension and flexion

Sit in a chair. Bend your knee and pull your foot under your chair, as far as you can, then bring your foot forward as you straighten your knee.



## Cardiac Walking Program

Walking will be your main form of exercise during the early recovery period. It is one of the best exercises for improving your health. You will have started your program in the hospital and will continue when you get home.



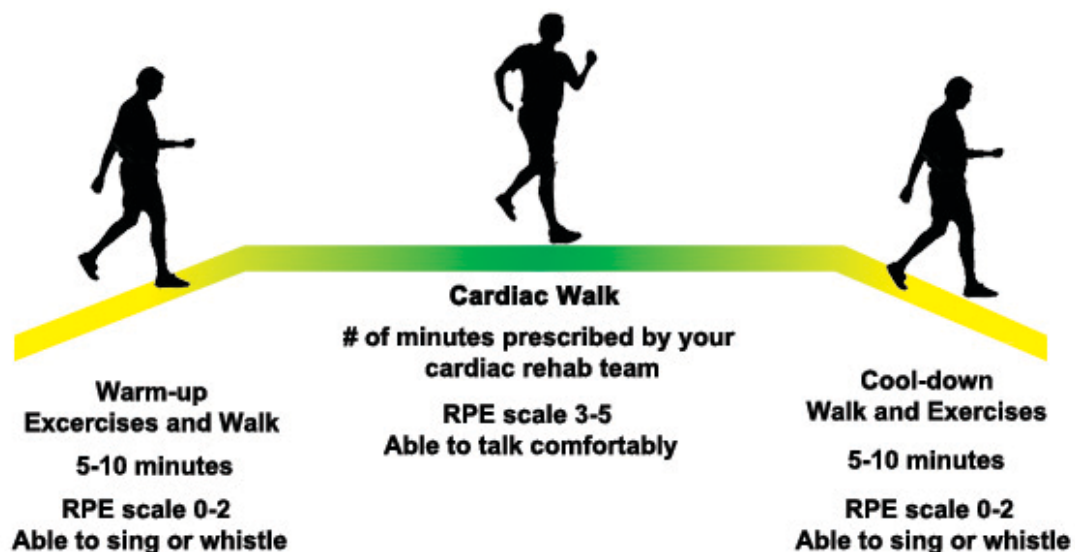
<b>Benefits of aerobic exercise</b>	
<ul style="list-style-type: none"> <li>• Helps the heart work more efficiently</li> <li>• Lowers blood pressure</li> <li>• Increases stress tolerance</li> <li>• Increases physical and mental stamina</li> <li>• Reduces blood sugar levels</li> <li>• Decreases your bad cholesterol (LDL) and increases good cholesterol (HDL)</li> </ul>	<ul style="list-style-type: none"> <li>• Promotes good sleep patterns</li> <li>• Increases energy levels</li> <li>• Improves circulation to the heart</li> <li>• Helps breathing and oxygen delivery to the tissues</li> <li>• Improves muscle relaxation</li> <li>• Helps maintain or achieve a healthy body weight</li> </ul>

### What you need to do to do your cardiac walk:

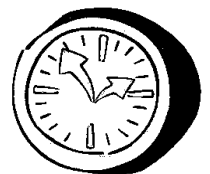
- Determine your pace and degree of exertion using the Talk Test and RPE Scale.
- Schedule exercise time into your daily routine. Exercising at the same time every day helps.
- Avoid exercising when you are angry or upset.
- Wear loose, comfortable clothing and a good pair of walking shoes. Good foot support is important.
- Walk with someone at first to help you feel more confident. Watch that you do not compete with anyone including yourself.



- Once you are more confident and walking alone, carry a cell phone in case of emergency. Avoid walking in remote or hard to reach areas.
- Take water with you.
- For the first 6 weeks, choose walking routes that are on level ground and are not hilly. Gradually add “hilly challenges” into your program as your strength and endurance improves. Be sure to slow down when you go up hills.
- Plan a route where you can rest (e.g. on a bench) until you have worked up to a non-stop walk. It is best to walk outdoors or in a mall.
- Think of the warm-up and cool-down walks as ‘bookends’ to your Cardiac Walking Program. Your heart rate should gradually increase during the warm-up, stay the same during the Cardiac Walk, and slow down during the cool-down.



- Begin walking \_\_\_\_\_ minutes 3 times a day. You can add a few shorter walks if you are feeling up to it.
- Increase each Cardiac Walk by 2 minutes per day according to your Talk Test and RPE Scale.
- When your Cardiac Walks are 20 minutes each, reduce the



frequency to 2 times a day, and then gradually increase the time to 30 minutes.

- When your Cardiac Walks are 30 minutes each, reduce the frequency to 1 per day, and then gradually increase the time to 60 minutes. The goal is to walk 30-60 minutes most days of the week.
- Keep track of your progress in your Exercise Log.

**Within 2–3 weeks of stopping a regular exercise program, your exercise ability will go back to the level you were at before you started. If you miss a few days, go back the number of days you missed and start there.**

## Stationary bikes and treadmills

When the weather is poor or you want a change, you can follow your walking program using a stationary exercise bike or treadmill.

Ask your cardiac rehab team for specific instructions before using a stationary bike.

Be sure that you are very comfortable with walking before using a treadmill. Treadmills require more balance and coordination than regular walking.



## How much effort should I exert when exercising?

When exercising in the recovery period, you should be breathing slightly faster, feel warmer, feel muscle effort and be able to carry on a conversation comfortably. You should NOT experience any of the symptoms listed on page 48.

Two methods below help determine the effort you should put into your exercise program. You will use a combination of them to ensure you are exercising safely.

The two methods are:

1. Talk Test
2. Rate of Perceived Exertion (RPE) Scale

### 1. Using the Talk Test (Sing -Talk -Gasp)

During warm-up and cool-down, you should be able to sing or whistle. During the exercise phase, you should be at the intensity level where you can talk comfortably. **At no point should you gasp for air!**

### 2. Using the RPE Scale

The RPE Scale rates your exercise effort. The scale scores your total effort, including the strain and fatigue in your muscles, breathlessness and physical effort. **Pay attention to your overall feeling and not just one factor.** Be as honest as possible and try not to overrate or underrate your perception of exertion. Aim for RPE of 3-5 (moderate) during your cardiac walk.

Rate of Perceived Exertion (RPE) Scale			
Exercise Effort		The Way You Feel	Exercise Phase
0	Nothing	Able to sing/whistle.  Activity easily performed.	Resting
1	Very weak		Warm up for 5-10 min & Cool down for 5-10 min
2	Weak		
3	Moderate	Slow to comfortable walk. You can <b>talk</b> easily. Feel warmer with some muscle effort. Breathing will be slightly faster and deeper.	This is the desired range for the first 6 weeks of your Cardiac Walk.
4			
5	Comfortably strong	Brisk to fast walk. Feel warmer; feel muscle effort.	For some people your exercise may progress to this level after your exercise treadmill test.
6	Stronger		
7	Very strong	Vigorous exercise. Difficulty talking, breathing hard. Very short of breath. Unable to maintain for very long. All out. Exhausted.	<b>Slow down! You have exceeded recommended level of activity!</b>
8			
9	Very, very strong		
10	Maximal effort		
Absolute maximum			



## Signs to stop and rest

Sometimes you may notice that your exercise effort is higher than you expect for a specific amount of exercise compared with previous exercise sessions.

### If your exercise effort is higher than usual, follow these guidelines:

- Consider possible reasons and correct them for next time (e.g. change in weather conditions, a recent heavy meal, busy day, dehydrated, stressed, coffee/tea, alcohol).
- Stop and rest for 2-5 minutes if you have any of these symptoms:
 

<ul style="list-style-type: none"> <li>▪ Pain or discomfort in the chest, neck, jaw, arms back</li> <li>▪ Excessive sweating</li> <li>▪ Nausea</li> <li>▪ Dizziness</li> <li>▪ Irregular heart beat</li> <li>▪ Extreme shortness of breath</li> </ul>	<ul style="list-style-type: none"> <li>▪ Feeling cold and clammy</li> <li>▪ Decreased coordination</li> <li>▪ Unusual joint or muscle pain</li> <li>▪ Head pounding</li> <li>▪ Extreme fatigue</li> <li>▪ Unusual fear or apprehension</li> </ul>
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- ❖ Rest for a further 5-10 minutes if the symptom(s) do not settle.
- ❖ Once settled, continue exercising within the 2-4 range of the RPE scale. Do not increase your exercise the following day.
- ❖ If symptoms have not settled within 15-20 minutes, call 911.

## Strength activities

- **Check with your cardiac rehab team or specialist before beginning any strength activities.** After your sternum has healed, light to moderate level strength training can be safe.
- Strength activities work your muscles against resistance. Increasing strength activities makes it easier to carry out activities of daily living.

- Regular strength training, combined with aerobic activities, can improve muscle strength and endurance, improve self-confidence and manage weight.

## Sex

- You may have less sex drive in the early recovery period because of pain, medications, fear or depression. This usually improves when you feel stronger.
- It is normal to feel anxious when you have a normal sexual response (e.g. high heart rate, shortness of breath and tense muscles).
- Talking to your partner about your concerns helps with closeness. You can create intimacy in other ways besides sexual intercourse.
- About the same amount of energy for sexual intercourse is used when climbing 20 steps in 10 seconds or walking briskly at 3-4 mph (5-6 km) per hour. When you can do this comfortably, you generally are able to have intercourse.
- Protect your chest during sexual activity. Find a position that does not put pressure on your chest and does not need support from your arms. Safe positions include side-lying, patient on bottom and seated upright.
- Avoid sexual activity after a large meal or after exercising. If you feel tired or tense, wait until you are more rested.
- Talk with your doctor or other members of your health care team about any concerns or questions you or your partner may have about resuming sexual activity.

## General time lines for resuming your usual activities

Weeks 1-6	After 6 weeks – Consider these activities if you can do more:	After 3 months – Consider these activities if you can do more:
<ul style="list-style-type: none"> <li>• Walk</li> <li>• Do light housekeeping (e.g. dust, set the table, wash dishes, fold clothes)</li> <li>• Do light gardening (e.g. pot small plants, trim flowers)</li> <li>• Attend sports events, church, movies, etc.</li> <li>• Climb stairs</li> <li>• Cook meals</li> <li>• Do needlework</li> <li>• Be a passenger in a car</li> <li>• Play cards, games</li> <li>• Read</li> <li>• Go to a restaurant</li> <li>• Have sex</li> <li>• Shop</li> <li>• Ride a stationary bike</li> <li>• Walk on a treadmill</li> </ul>	<ul style="list-style-type: none"> <li>• Return to work if:               <ul style="list-style-type: none"> <li>• your job does not require lifting, and</li> <li>• Your surgeon gives approval</li> </ul> </li> <li>• Do heavier housework (e.g. vacuum, sweep, laundry, iron)</li> <li>• Go boating or fishing</li> <li>• Travel</li> <li>• Drive a car or small truck</li> <li>• Do light aerobics with no weights</li> <li>• Walk the dog on a leash</li> <li>• Do small mechanical jobs</li> <li>• Begin to lift over 5lbs</li> <li>• Golf (do not carry golf bags)</li> </ul>	<ul style="list-style-type: none"> <li>• Return to work full time with your specialist's approval</li> <li>• Do heavy housework (e.g. lift groceries, clean windows, scrub floors)</li> <li>• Do heavy gardening (e.g. shovel snow, dig, mow lawn, rake leaves)</li> <li>• Ride a bike or jog</li> <li>• Bowl</li> <li>• Hunt</li> <li>• Ride a motorcycle</li> <li>• Play softball/baseball</li> <li>• Swim</li> <li>• Play tennis</li> <li>• Water ski</li> <li>• Weight lift in moderation</li> <li>• Play hockey</li> <li>• Use a hot tub</li> </ul>

## Nutrition Guide

### Nutrition for Healing

It is important that you give your body enough protein, energy, fluids, vitamins and minerals to heal.

**Protein:** Protein comes from meat, poultry, fish, nuts, seeds and legumes (beans, peas and lentils). Be sure to eat a portion of lean protein at every meal.

**Energy:** Eat plenty of whole grains, complex carbohydrates, fruits and vegetables to get enough calories. Be sure to eat enough energy-rich foods so that the protein in your diet can be used to heal and not be used up for energy.

**Fluids:** Water, juice, milk, coffee, tea and soup are all considered fluids. Check with your doctor to see if you should be following a fluid restriction.

**Vitamins and Minerals:** These provide the building blocks to heal wounds. Be sure to eat a variety of foods to get adequate vitamins and minerals. You may also want to take a vitamin and mineral supplement.



### Heart Healthy Eating

- *Cut down on saturated fat and avoid trans fat.*
  - Choose liquid vegetable oils and non-hydrogenated soft margarines rather than butter, hard margarine, lard, or shortening
  - Read labels and choose foods with less than 2 grams of saturated fat in a serving
  - Choose lower fat dairy products. Opt for skim or 1% milk and yogurt and cheese with 20% milk fat or less

- *Reduce your intake of fatty meats*
  - Choose lean meat, poultry and fish (1 serving = size of a deck of cards)
  - Try beans, lentils, nuts or tofu instead of meat
  - Broil, bake, grill, steam or microwave instead of frying foods
- *Increase omega-3 intake*
  - Aim for 2 servings of fish per week (salmon, sardines, herring, anchovies, trout or tuna)
  - Include plant based omega-3 fats (chia seeds, ground flax seeds, walnuts and hemp hearts)
- *Eat a variety of colourful fruits and vegetables every day*
- *Choose more whole grains*
  - Switch from white bread, white pasta, and white rice to whole grain bread, whole wheat pasta, and brown rice
- *Limit high fat snacks and sugary desserts.*
  - Limit chocolate, ice cream, chips, cheezies, and commercial baked goods
  - Limit juices, pops and specialty coffees
  - Better choices include fruit, low fat pudding, angel food cake and frozen yogurt
- *Reduce salt intake*
  - Limit packaged food such as pickles, canned soups, deli meats, sauces and condiments
  - Avoid adding salt while cooking and at the table.



## Read Food Labels

The Nutrition Facts table can help you make healthier choices.

### Step 1: Look at the serving size

Compare this to the amount of food you actually eat. If the serving size is listed as 1 cup, but you would normally eat 2 cups then you would need to double all the amounts listed.

### Step 2: Look at the percent daily value (% DV)

This shows you if a food has a little or a lot of a nutrient.



<b>Nutrition Facts</b>	
<b>Valeur nutritive</b>	
Per 1 cup (250 mL) pour 1 tasse (250 mL)	
<b>Calories 110</b>	<b>% Daily Value*</b>
	<b>% valeur quotidienne*</b>
<b>Fat / Lipides 0 g</b>	<b>0 %</b>
Saturated / saturés 0 g	0 %
+ Trans / trans 0 g	
<b>Carbohydrate / Glucides 26 g</b>	
Fibre / Fibres 0 g	0 %
Sugars / Sucres 22 g	22 %
<b>Protein / Protéines 2 g</b>	
<b>Cholesterol / Cholestérol 0 mg</b>	
<b>Sodium 0 mg</b>	<b>0 %</b>
Potassium 450 mg	10 %
Calcium 30 mg	2 %
Iron / Fer 0 mg	0 %
*5% or less is <b>a little</b> , 15% or more is <b>a lot</b>	
*5% ou moins c'est <b>peu</b> , 15% ou plus c'est <b>beaucoup</b>	

### Step 3: Choose

Less of: Fat, saturated and trans fat, sodium, sugar

More of: Fiber, vitamins, calcium, iron

## **What to Do with Your Concerns**

### **Call 911 or go to the nearest Emergency Room**

- Angina like chest pain similar to pre-op
- Shortness of breath not relieved by rest
- Fast heart rate (>150 beats/min) with shortness of breath
- New irregular pulse with fast heart rate (>150 beats/min)
- Fainting spells
- Sudden weakness or numbness in your arms and legs
- Sudden problems with speaking, coordination or severe headache
- Temporary blindness in one eye or double vision
- Vomiting blood
- Bright red stools
- Severe abdominal pain
- Chills or fever
- Pus or yellow/green drainage from your incisions

### **Call your primary care provider**

- Bleeding or opened-up incisions
  - Drainage from incision that changed in appearance or color
  - Low grade fever (37.5C/101.3F and over) for more than 3 days
  - Gradual onset of shortness of breath
  - Weight gain of 2-3 pounds over 1-2 days
  - Increasing ankle swelling
  - Pain that is not relieved with pain medications
  - Upset stomach, vomiting, or stomach pain that stop you from eating
  - Black stool if you are not taking iron
  - Persistent sad or negative feelings affecting your recovery and relationship
-

## **Frequently Asked Questions**

### **Q. Do I need to take medications for rest of my life?**

**A.** Most likely yes. Bypass surgery does not cure coronary artery disease so you will need to take medications to slow the progress of disease and keep the graft open. Heart valve surgery patients will need a medication to prevent blood clot formation.

### **Q. How do I come off pain medications?**

**A.** First, increase the time between pain medications. If you are taking pain medication four times a day, then reduce it to three times. Next, you can reduce the amount you are taking – take one tablet instead of two, for example.

### **Q. What if I need more support with daily care after I get home?**

**A.** Talk to your primary care provider. You may also want to consider contacting private home care agencies, private respite facilities or central intake for home and community care in the area you live.

### **Q. I had a valve repair or replacement. How soon can I have dental work done?**

**A.** It is generally safe to see your dentist 3 months after heart valve surgery with appropriate endocarditis prophylaxis (oral antibiotic before visit).

### **Q. Can I be on the newer anticoagulation with my mechanical heart valve?**

**A.** Warfarin/Coumadin is the only approved method of preventing blood clot formation on your mechanical valve at this time. In the future, a new anticoagulation medication may become available and if so, your cardiologist may discuss its use with you.





## Discharge Medication

### Commonly Used Medications after Heart Surgery

Class	Indication	What does it do	Common side effects and monitoring
Antiplatelet	Coronary artery disease Bypass grafts Artificial valves (tissue and mechanical)	Prevent clots formation in your blood to lower risk of heart attack or stroke.	Upset stomach Bleeding from the stomach
Beta blocker	High blood pressure Heart failure Heart attack Fast heart rate Arrhythmias	Lower blood pressure and pulse. Reduce workload of the heart. Prevent and treat arrhythmia.	Dizziness Sleeplessness Tiredness –usually improves over time
Angiotensin converting enzyme inhibitor	High blood pressure Coronary heart disease Heart failure Heart attack	Lower blood pressure. Help blood vessel relax so the heart does not need to pump hard. Protect kidneys in patients with diabetes or kidney disease.	Dry cough Dizziness Headache Loss of taste Rare but serious side effects are swelling of the lips, tongue and throat. Call 911 if this occurs.  Monitor kidney function and potassium
Angiotensin II Receptor Blockers	High blood pressure Heart failure Heart attack	Commonly used when people cannot tolerate angiotensin converting enzyme inhibitor.	Dizziness  Monitor kidney function and potassium

Statin (lipid lowering)	High cholesterol Bypass graft Diabetes	Lower cholesterol and lipid levels. Stabilize/slow progression of plaque disease.  Lower risk of stroke and heart attack.	Muscle pain (uncommon), if you develop this, talk to your health care provider. Dosage adjustment or change to another medication may help.  Monitor liver function if indicated and lipids profile.
Calcium channel blockers	High blood pressure Bypass graft (radial artery) Fast heart rate	Lower blood pressure. Slow heart rate. Reduce spasms in radial artery graft.	Dizziness Swelling of the ankles
Diuretics	Fluid retention Heart failure High blood pressure	Lower blood pressure. Remove sodium and water.	Electrolytes imbalance  Monitor electrolytes and kidney function.
Anti-Arrhythmics	Abnormal heart rhythm	Treat arrhythmias.	Nausea
Anti coagulants	Irregular heart rhythm Mechanical heart valve (Warfarin)	Prevent blood clot formation.	Bleeding Talk to your health care provider if any signs of bleeding (blood in urine, stools, excess nose bleeding, vomiting blood, significant bruising)
Iron supplement	Anemia		Upset stomach Stomach cramps  Your stool will be darker.

## **Copy of My Discharge Prescription**





## Follow-up Appointments

Primary care provider _____	Within the 1 <sup>st</sup> week to 10 days after discharge	Date: _____ Time: _____
Cardiologist/Internist Dr. _____	___ weeks after discharge Tel: _____	Date: _____ Time: _____
Cardiac Surgeon Dr. _____	___ weeks after discharge (if needed) Tel: 250-595-1833	Date: _____ Time: _____
Other Doctor Dr. _____	___ weeks after discharge Tel: _____	Date: _____ Time: _____

**Follow-up tests**

Not required

- Blood test                      Date: \_\_\_\_\_ Time: \_\_\_\_\_
- Holter monitor                      Date: \_\_\_\_\_ Time: \_\_\_\_\_
- Chest X-ray                      Date: \_\_\_\_\_ Time: \_\_\_\_\_
- Echocardiogram                      Date: \_\_\_\_\_ Time: \_\_\_\_\_
- CT scan                      Date: \_\_\_\_\_ Time: \_\_\_\_\_
- Other: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_









## **First Visit with your Primary Care Provider**

### **Checklist**

- ❑ Review your overall progress
- ❑ Check blood pressure, heart rate and temperature
- ❑ Review medications
- ❑ Check incisions
- ❑ Review tests that were done after discharge (if applicable)
- ❑ Remove chest tube sutures if you have them (black sutures tied in the lower chest)
- ❑ Remove staples if applicable

### **Patient Resources**

#### **Accommodations in Greater Victoria Area**

##### **Cardiac risk reduction / rehabilitation program**

- ❑ Please see [Cardiac Surgeon's Office website](#) (patient resources)

#### **Medical Alert (if you had a valve surgery)**

- ❑ Make sure you get a medical alert bracelet that says you have had heart valve surgery. You can order one from the [Canadian Medical Alert Foundation](#) or by phone 1-800-668-1507.

#### **Stress management**

- ❑ [Cognitive Behavioural Therapy \(CBT\) Skills Group \(Victoria\)](#)
- ❑ [Find a Registered Clinical Counsellor in your area](#)