

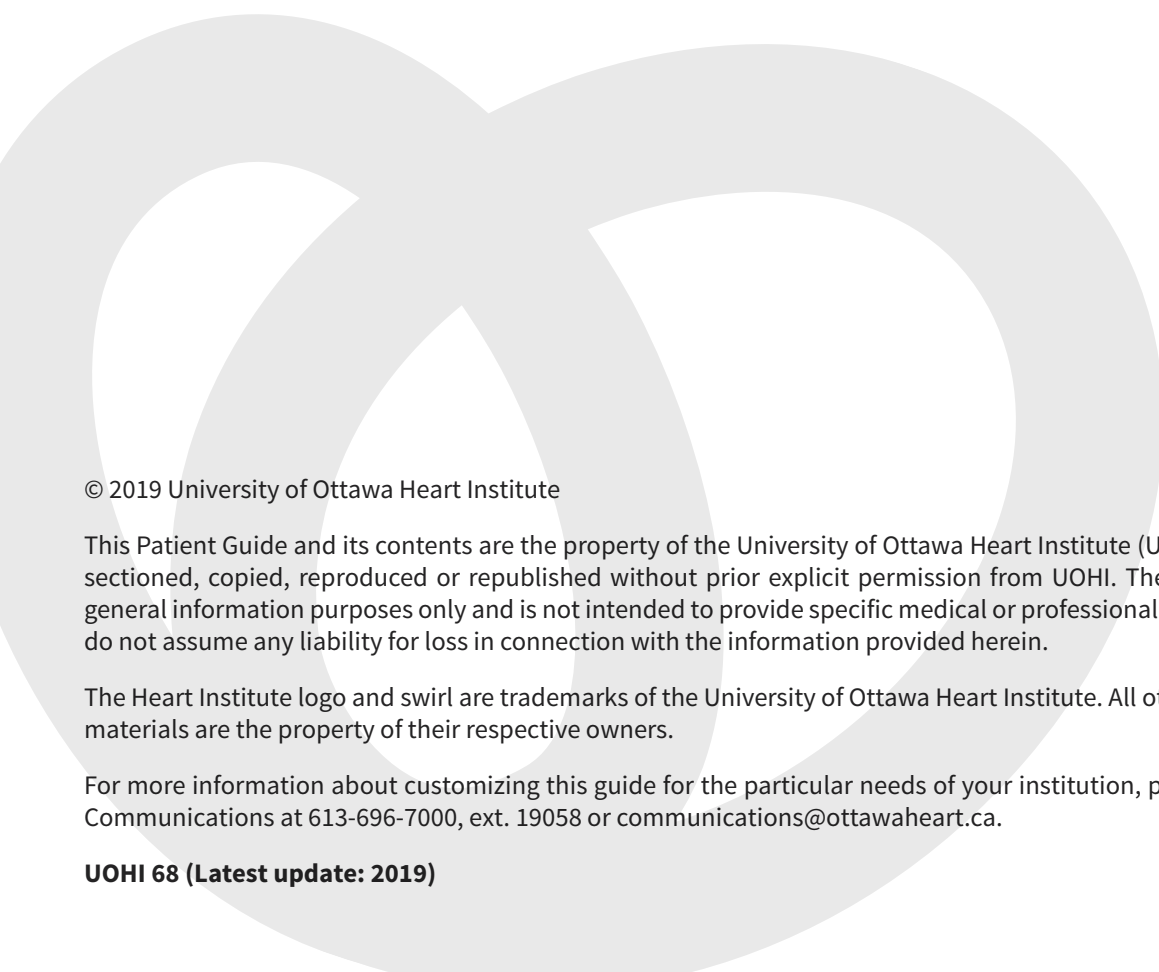


UNIVERSITY OF OTTAWA
HEART INSTITUTE
INSTITUT DE CARDIOLOGIE
DE L'UNIVERSITÉ D'OTTAWA

Waiting for Cardiac Surgery



A GUIDE FOR PATIENTS AND FAMILIES



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UOHI 68 (Latest update: 2019)

PLEASE BRING THIS BOOKLET WITH YOU TO THE HEART INSTITUTE

Patient Name: _____

If you have any change in your symptoms or other concerns while you are waiting for surgery, call the regional cardiac care coordinator at 613-696-7062 between 8:00 a.m. and 4:00 p.m. After-hours and after your surgery, please call the 24-hour number below.

Surgical Nursing Coordinator: 613-696-7000,
press 0 and ask for the surgical nursing coordinator (24-hour number)

The coordinator is available before, during and after your stay at the Heart Institute in the event you have questions or concerns.

**IF THIS IS AN EMERGENCY, PLEASE CALL 911 IMMEDIATELY OR
VISIT YOUR NEAREST EMERGENCY DEPARTMENT.**

PLEASE COMPLETE THE FOLLOWING INFORMATION

Contact Person
(relative, friend)

Name _____

Phone Number (Home) _____

Phone Number (Cell) _____

Surgeon

Name _____

Phone Number _____

Family Doctor

Name _____

Phone Number _____

Pharmacy

Name _____

Phone Number _____

Cardiologist

Name _____

Phone Number _____

PATIENT RESPONSIBILITY CHECKLIST

The following checklist will help you prepare for admission:

- Identify one family member or support individual to act as your contact person while you are at the Heart Institute. This person will be contacted after surgery at pre-arranged times and in the event of an emergency. All family members should know who the contact person is and should call that person for progress information.
- Arrange for a ride home from the hospital. You will not be able to drive for four to six weeks after the surgery.
- Arrange for someone to stay with you for the first week or two after you return home following surgery. If you need assistance to arrange convalescent care, please contact the surgical social worker at 613-696-7389 as soon as possible.
- You will be told which medications to take the morning of your surgery. You may take them with a small sip of water.
- Do not bring any valuables (including jewelry). The Heart Institute is not responsible for loss or damage of such items.
- Bring all your medications in their original pharmacy containers or blister packs. Complete the medication list in Appendix 1.
- You will not need any personal belongings until you are transferred to the ward after your stay in the Cardiac Surgery Intensive Care Unit (CSICU). Your family can bring them to you then.
- Remove nail polish and do not apply make-up.
- Do not use any scented skin products.

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OVERVIEW

The purpose of this guide is to help you prepare for admission to the University of Ottawa Heart Institute. This information is for you to read once you have been placed on the surgery waiting list.

KEY MESSAGES

If your condition changes, notify the regional cardiac care coordinator at the Heart Institute at **613-696-7062**.

If there is an emergency, please dial 911 or go to your nearest emergency department.

Make a detailed list of all your medications (see p.23).

Do not change, stop or add any medications without first discussing it with your family physician or specialist.

Start planning now for your recovery at home.

What You Should Do While Waiting for Surgery

Waiting for surgery can be a difficult time. It is normal to worry and feel stressed. Talk to other people who have had heart surgery and share your concerns with them. Recognize if you need more help and talk to your doctor.



IMPORTANT

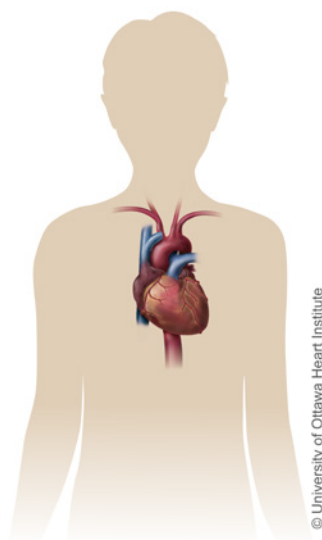
Please bring this booklet to your doctor's appointments.

LEARN ABOUT YOUR HEART SURGERY

About the Heart

THE HEART

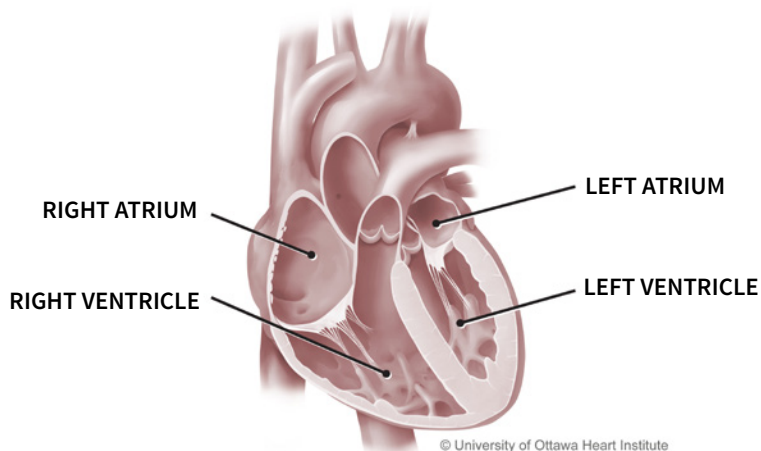
The Heart is a fist-sized muscle that is located in the centre of the chest, between your lungs. It works as a pump to move blood throughout your circulatory system. Blood delivers oxygen and nutrients to, and removes waste from, all the cells in your body.



HEART VALVES

The heart contains four chambers and four one-way valves. The two upper chambers are called the atria. The two lower chambers are called ventricles.

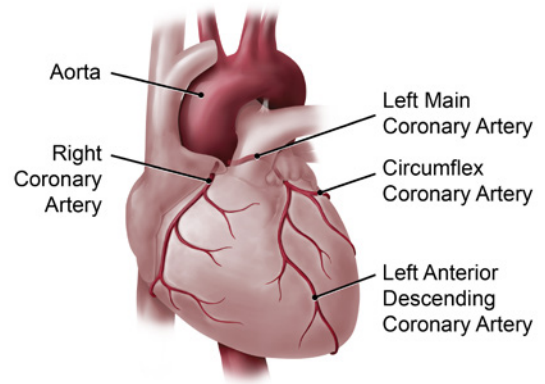
The four one-way valves keep blood flowing in one direction through each chamber as the heart pumps. The valves open to let blood flow through and then close to prevent blood from flowing back.



THE CORONARY ARTERIES

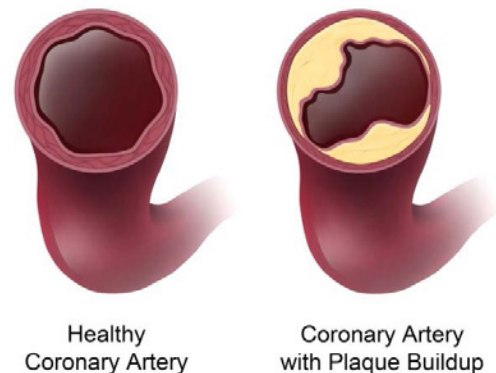
Coronary arteries supply oxygen and nutrient-rich blood to the heart muscle itself.

There is a right and left coronary artery. The left coronary artery divides further into the left anterior descending artery and the circumflex artery.



CORONARY ARTERY DISEASE

Coronary artery disease occurs when the coronary arteries become narrowed with deposits of fat and cholesterol. This can either decrease or completely stop the blood supply to part of the heart. The result can be angina or a heart attack.



Prediabetes and Diabetes in Heart Disease

Like Type 2 Diabetes, prediabetes can occur without you knowing. Abnormal glucose levels in your blood significantly accelerate the development and natural history of cardiovascular disease compared to individuals without diabetes. Being aware of your risk factors and being tested are important. This is especially true if you have prediabetes as well as some other risk factors such as

- High blood pressure
- High levels of bad cholesterol (LDL)
- High levels of triglycerides
- Low levels of good cholesterol (HDL)
- Abdominal obesity

People living with diabetes are at a 4 times greater risk of developing heart disease. Poorly controlled glucose in your blood

- Can lengthen your hospital stay
- Increase your healing time
- Increase your risk of infection

Coronary Artery Bypass Graft Surgery

A test called an angiogram is used to determine the need for this surgery. Bypass surgery improves blood flow to the heart. It is called “bypass” because arteries or veins are taken from another part of your body and used to create new routes around (bypassing) narrowed and blocked arteries. In most situations, more than one artery or vein will be used.

The bypass may be done with:

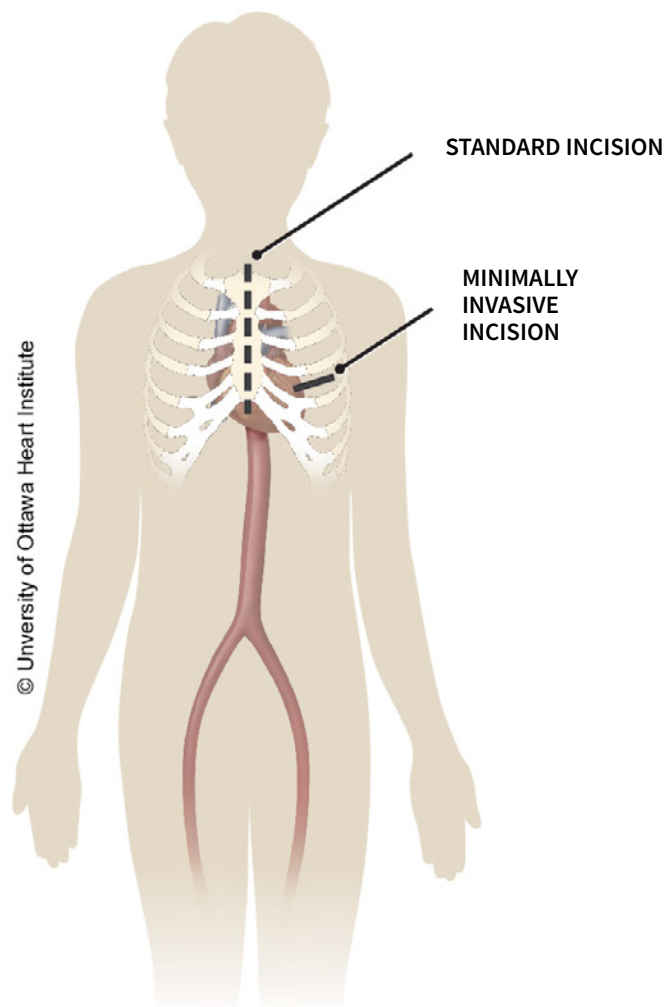
- An artery from your chest wall (internal thoracic or internal mammary artery)
- Part of a vein from your leg (saphenous vein)
- An artery from your arm (radial artery)

After the bypass is done, blood can flow through the new artery and around the blocked coronary artery to deliver oxygen and nutrients to your heart muscle.

This may eliminate or reduce your chest pain (angina), increase your ability to be physically active, help to improve your quality of life and in some patients, prolong life. Your surgeon will decide on the exact number of coronary arteries to be bypassed during your operation.

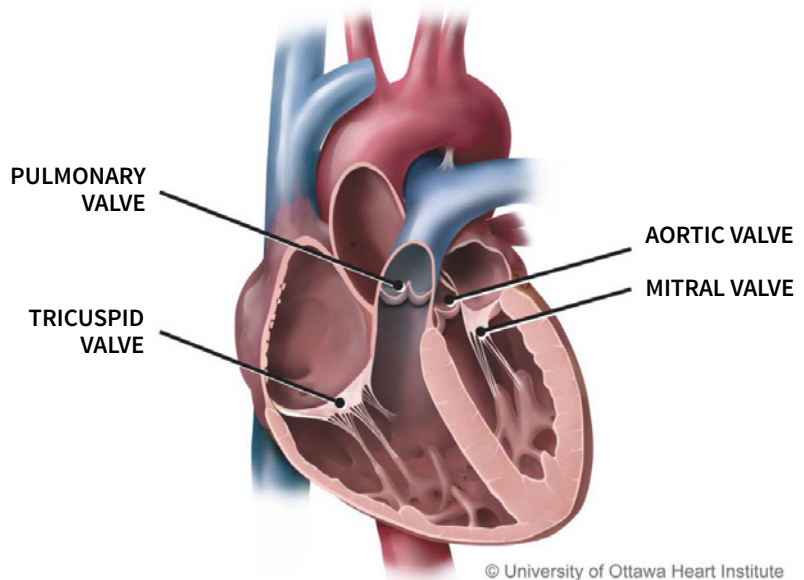
BYPASS SURGICAL INCISION

An incision is made through the patient’s chest and breastbone to allow access to the heart. Some patients may undergo minimally invasive coronary bypass surgery via a smaller incision between the ribs. This surgery is called single- or multi-vessel small thoracotomy (SVST or MVST). You may have small incisions in your leg if veins are used for bypass and/or an incision in your arm if a radial artery is taken for a bypass.



Heart Valve Surgery

The main job of heart valves is to make sure blood flows in the right direction as it is pumped through the heart. Each valve has either two or three leaflets that open and close with the flow of blood. When you have a valve problem, the blood flow becomes disrupted and your heart can get enlarged, leading to problems with heart failure. Problems with heart valves include not opening properly (stenosis) because it has become thickened and stiff or not closing properly (regurgitation or insufficiency) because it is weak or torn.



The heart valves that most often require surgery are the mitral valve, aortic valve and the tricuspid valve.

Heart valves may develop problems when:

- They are not formed normally at birth
- They become damaged or scarred from diseases such as rheumatic fever or other bacterial infections
- They become weakened or hardened through the normal wear and tear of age

Heart valve surgery is required when:

- The valve cannot maintain the regular flow of blood through the heart
- The heart begins to enlarge and not work properly
- Symptoms of shortness of breath, dizziness and fatigue increase

Heart valve surgery may involve:

- Repairing the valve leaflets to allow the valve to open and close properly
- Inserting a supporting ring to support the valve leaflets
- Removing the valve and replacing it with a tissue or mechanical valve

TISSUE VALVES

Tissue valves are chemically treated or engineered animal valves that are very similar to natural heart valves. They usually do not require you to be on blood thinner medication for the long term. However, they are not as durable as mechanical valves and may deteriorate over time and need to be replaced.

MECHANICAL VALVES

Mechanical valves are made of durable metals, carbon, ceramics and plastics. They are longer lasting than tissue valves but require that you take an anticoagulant (blood thinner) medication for the rest of your life and have frequent blood tests to check the effectiveness of the drug. Your surgeon will discuss options with you. In some cases, a repair may not be possible and the valve will need to be replaced.

Combined Valve and Bypass Surgery

In some instances, a patient may need both valve surgery and coronary artery bypass surgery at the same time. Your physician will discuss this with you.

Aortic Surgery

The aorta is the largest blood vessel in your body. Its main job is to pump blood from the heart to all of the organs. If the aorta becomes enlarged or dilated, surgery is performed to replace this enlarged section.

A tube or graft made of a polyester material replaces the aorta. Occasionally, the aortic valve is repaired or replaced during the same operation. Your surgeon will discuss this with you before the surgery.

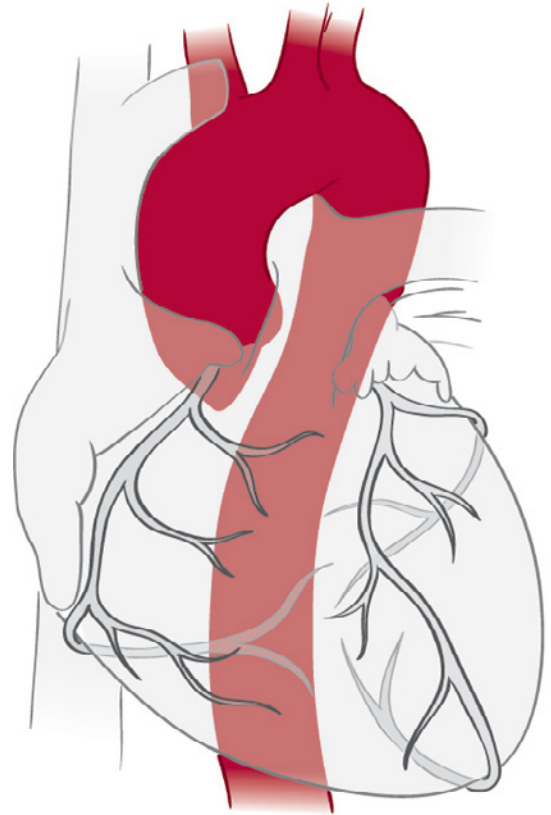
Continuous monitoring is very important for patients with aortic diseases. This will be arranged through the Aortic Clinic.

Pre-operative Preparation

Preparation for aortic surgery is the same as for bypass or valve surgery.

The Surgical Incision

An incision is made through the patient's breastbone to allow access to the heart.



STERNAL PRECAUTIONS

What is a sternotomy or breastbone incision?

A sternotomy or breast bone incision is a surgical incision made through the center bone of your chest, called the sternum. Your surgeon will cut through the bone to be able to access your heart during surgery. The bone is then closed up using metal wire. Not all patients have a sternotomy – if you are having a minimally invasive surgery you may have a thoracotomy incision through your ribs which is a little different – Please see “Precautions for Thoracotomy Minimally Invasive Procedures” below if this is you.

Why do you need to use sternal precautions after surgery if you have an incision at your breastbone?

In order for your sternum bone to heal properly it will be very important for you to follow sternal precautions after your surgery. After a sternotomy, these precautions (noted in the box below) will be reviewed with you daily by your health care team. These precautions can help your bone heal and avoid infection. Your surgeon will let you know when you can return to regular use of your arms, usually within 6 to 8 weeks after your surgery.

STERNAL PRECAUTIONS

After your surgery, it will be important that you do not lift, push or pull more than 5 to 10 pounds with your arms for 6 to 8 weeks.

This will allow your sternum time to heal properly.

Learning to move safely with sternal precautions takes some practice, but is very important. If you practice the techniques before your surgery, you will be more comfortable using them after your surgery, which will help you protect your incision. The techniques described in the coming pages are the most commonly used.

STANDING UP FROM A BED, CHAIR, OR TOILET:

Technique:

1. Cross your arms over your chest while hugging your “teddy”.
2. Without using your hands or arms, wiggle your bottom to the edge of the chair by leaning from one side to the other.
3. Be sure your feet are close to the chair.
4. Lean your whole body forwards to get your weight over your feet, and push into your feet to stand up. You may rock your body a few times to gain some momentum.



GENERAL PRECAUTIONS:

- Do not use your arms to push when getting up and down off of chairs or beds.
- Do not reach behind yourself when going to sit down (e.g. do not reach for arm rests or seating surfaces).
- Hug a pillow or cross your arms before sitting and standing to reduce the risk of using your arms to push on and off surfaces (to brace your wound).
- Raise the height of your seat surfaces if needed, such as using a raised toilet seat (without arm rests), furniture risers, and / or cushions.
- If someone is assisting you, have them provide support around your back and rib cage.

GETTING OUT OF BED, FROM LYING TO SITTING:

Technique:

1. Cross your arms over your chest while hugging your “teddy”.
2. Bend your hips and knees, and log roll (head, shoulders, hips, and knees – all turning at the same time) onto your side. Be sure to be all the way over onto your side!
3. Let your legs fall over the edge of the bed and pull with your feet while gently using your elbow to push your body off the bed into a sitting position (having the bed inclined can make it easier).
4. You may need to wiggle your bottom to the edge of the bed by leaning from one side to the other.
5. Sit on the edge of bed before standing up, following the technique described above.

General Precautions:

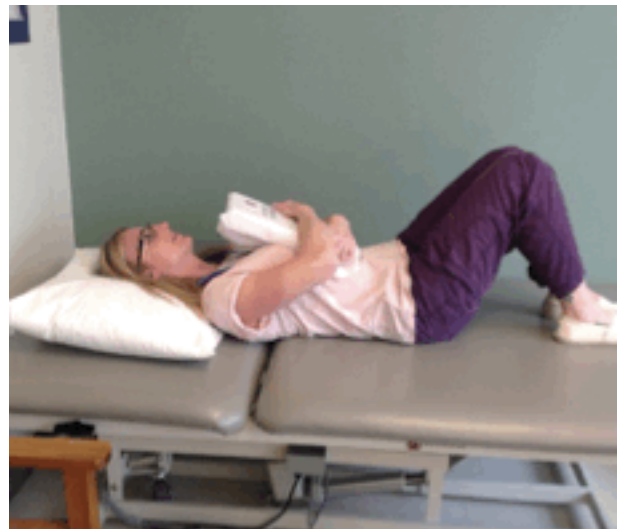
- Do not use a bed rail to help with turns, positioning, or transfers.
- If someone is assisting you, be sure they are familiar with the technique to avoid getting hurt while helping you sit up.



GETTING INTO BED:

Technique:

6. Have the bed flat to reduce exertion.
7. Hugging a pillow, sit deep on the edge of the bed, near the top of the bed.
8. Lie onto your side, using your elbow to help lower yourself down.
9. Lift your legs onto the bed with knees in a bent position, so that you are lying on your side.
10. Roll onto your back with your head, shoulders, hips, and knees – all turning at the same time (log roll).



General Precautions:

- Use your legs to scoot up and down (not your arms).
- Have your knees bent and your feet flat on the bed and push off the bed with your legs extended to push yourself up in bed.

Speak to your physiotherapist or occupational therapist with any questions regarding the above techniques.

Precautions for Thoracotomy Minimally Invasive Procedure

In some situations, coronary artery bypass surgery may be done through a small incision in the side of the chest called a “thoracotomy”. The general guidelines include for this type of incision include:

- No heavy lifting for the first 4 to 6 weeks after your surgery.
- When you feel ready to lift light objects, you can go ahead. This can be as early as one week after the operation.
- Because the breastbone has not been cut, there is no danger of breaking it.
- If you experience pain or feel a cracking sensation when you lift an object, you are doing too much. This is your body telling you that you are not ready for this activity.

PREPARING FOR YOUR HEART SURGERY

Read the information in this guide and share it with your family. Make a list of questions to ask your doctor.

For more information on procedures, cardiac conditions and patient information, visit www.ottawaheart.ca/for-patients-family.htm.

START MAKING HEALTHY LIFESTYLE CHOICES

Healthy lifestyle changes don't have to wait until after your surgery. Here are a number of things you can do to prepare:

If you smoke, quit! It is one of the most important things you can do while waiting for surgery.	Call the Heart Institute's Quit Smoking Program at 613-696-7069.
Aim for healthier food choices.	Attend the Heart Institute nutrition workshops; call 613-696-7000, ext. 19641.
If you have high blood pressure, keep track of your blood pressure readings.	Take your blood pressure medication as prescribed by your doctor.
If you have high cholesterol, make sure you take your cholesterol medication as prescribed by your doctor.	Know your cholesterol levels.
If you have diabetes, continue your medication and insulin as prescribed. Initiate more frequent self monitoring of your blood glucose while you are waiting for surgery. This is a stressful time with less physical activity resulting in abnormal readings. If you don't have a meter, speak with your pharmacist to get started.	Blood glucose targets fasting and before meals should be between 4 – 7 mmol/l. If you are checking within 2 hours of a meal 5 – 10 mmol/l. Checking at different meals and different times of day, will provide you and the team a snapshot on potential areas that need to be addressed. If your results are not in target, please contact your family practitioner or your diabetes team. Medication may need to be adjusted or added while you are waiting for surgery. If you are unable to reach your usual team or don't have one, please contact the Advance Practice Nurse for Diabetes at 613-696-7000 Ext 17111. This is an ideal time while you are waiting for surgery to improve your glycemic control.
Reduce stress as much as possible.	Identify the greatest sources of stress in your life and start planning ways to deal with them. See page 33 for some top tips to manage stress.

HEALTHY EATING WHILE YOU ARE WAITING FOR SURGERY

Good nutrition before your surgery is important and may help you recover and heal more quickly after your surgery. It is important to make sure that your body is getting the right nutrition at this time. Here are some tips that will help you eat well before your surgery. For more healthy eating tips see the “Top 10 tips for healthy eating” in Appendix 2. To see the schedule of nutrition classes offered at UOHI, please visit ottawaheart.ca.

- Eat at regular times: Eat breakfast within 1 to 2 hours after waking up. Don't wait too long between your meals. It's harder to make healthy choices when you're hungry.
- Plan healthy snacks: Try whole-grain crackers and peanut butter or hummus, a piece of fruit and a few unsalted nuts, or frozen berries and plain Greek yogurt.
- Include protein sources in every meal and snack: Try nut butters on your toast, add canned fish to your salads or chicken to your soups. Cook more meat than you need and freeze the extra. The meat is ready to reheat and add to dishes when you need it.
- Have easy-to-prepare meals and snacks on hand for when you don't feel like cooking, such as granola bars, nuts, seeds, trail mix, or cheese and crackers. You might want to use a service like Meals on Wheels or ask friends and family to help you with groceries and making meals.
- Don't be afraid of fat: You need fat for good health, and it adds flavour to your cooking. Use plant-based fats such as olive or canola oil.

If your appetite is poor while you are waiting for your surgery or you notice that you are losing weight without trying to, tell your physician. They can refer you to the outpatient registered dietitian in Cardiac Rehab at the University of Ottawa Heart Institute.

WHAT TO DO IF YOUR SYMPTOMS CHANGE

Notify your doctor or the regional cardiac care coordinator if you have more episodes of chest pain or problems with breathing.

The regional cardiac care coordinator:

- Is part of the surgical team at the Heart Institute
- Is the person you can call if your condition changes
- Can be reached from 8:00 a.m. to 4:00 p.m. at 613-696-7062
- Is covered during off-hours by the Nursing Coordinator — call 613-696-7000, press 0 and ask for the Nursing Coordinator



IMPORTANT

If your condition suddenly gets worse, **call 9-1-1** or go to the nearest emergency department.

PREPARATIONS FOR COMING TO THE HOSPITAL

Before you are admitted, make arrangements for:

- The items on the Patient Responsibility Checklist, at the beginning of this book.
- Someone to manage your personal affairs, if you do not have a spouse or partner to do so. Arranging your power of attorney (POA) is recommended if you do not have a partner or spouse. More information can be found here:
<http://www.attorneygeneral.jus.gov.on.ca/english/family/pgt/poakit.asp>.
- Time off work. If you work outside the home, arrange to be off work for about three months (for procedures that are minimally invasive, check with your surgeon). Confirm your sick leave benefits, including employment insurance or social assistance while not working.

Managing Your Medications



IMPORTANT

Do not change, stop or add any medication without first discussing it with your doctor.

Take only the medications prescribed to you on discharge.

Keeping an updated list of your medications and following the steps below will help you improve communication with your health care team and reduce the risk of complications.

MAKE A DETAILED LIST OF YOUR CURRENT MEDICATIONS

You can use the medication list provided in this guide (see Appendix 1) to help you track your medications. You will need this list during your appointment at the Pre-Admission Unit and when you are admitted for your surgery.

List all of your medications on the form provided, including:

- Prescription medications that you take regularly
- Prescription medications that you take only as needed, such as nitroglycerin or pain medications
- Any herbal medication, such as ginseng or ginkgo biloba
- Other medications, such as vitamins, laxatives, aspirin or Tylenol®

Keep this form up to date. Ask your nurse, doctor or pharmacist if you need help to complete each section. Keep it with you at all times and bring it to all your appointments so that medical professionals are aware of the medications you are taking.

When you are discharged from the hospital, some of your medications may be changed. Your nurse will review your prescriptions with you. Make sure you understand all of the changes, and be sure to ask questions if you don't understand.

When you fill your prescriptions, review the list with your pharmacist to make sure that nothing has been missed or duplicated.

Wait Times for Surgery

The Province of Ontario uses a waiting list management strategy to make sure people get their surgery at the right time.

The strategy includes:

- A system that keeps track of all wait times for heart surgery in Ontario
- Information about your specific condition, to make sure you get your surgery at the right time
- An opportunity to call the Regional Cardiac Care Coordinator between 8:00 a.m. and 4:00 p.m. at 613-696-7062 if you have questions about the wait time.
- A website to monitor provincial wait times:
www.health.gov.on.ca/transformation/wait_times/wt_understanding.html

Pre-Admission Unit (PAU)

Once you have a date for your surgery, you may be scheduled to visit the Pre-Admission Unit (PAU).

Appointment Date: _____ Time: _____

To get to the PAU, take the elevator up one floor from the main lobby of the Heart Institute and check in at the reception.

For your appointment, please bring:

- This guide
- An up-to-date list of your medications. A blank form is provided for you in Appendix 1.
- Your medication bottles, safely packed in a labelled bag or case
- Your provincial health insurance card and proof of any other health insurance
- Any documents or information from your doctor
- Your reading glasses
- A family member or friend who can help you by taking notes or asking questions
- Any walking aids that you regularly use. This will help with planning your care after surgery.
- If you speak a language other than English or French, please bring someone who can translate for you.

The Purpose of Your Appointment at the PAU

At your appointment, you will have a physical exam and medical history taken by a nurse. You will also be assessed by the anaesthesiologist.

This appointment will give you information about preparing for surgery and what to expect immediately after surgery. It will also help plan your discharge from the Heart Institute and your recovery at home. Come to the appointment with any questions or concerns that you may have.

At Your PAU Appointment

Expect to be at the Heart Institute for about 2½ hours. Some of your blood and urine tests may be repeated, and you may be referred to other health care professionals such as a social worker or physiotherapist, depending on your specific situation.

What to Bring on the Day of Your Admission

When you are admitted, please bring the following:

- Your updated list of medications OR your medication bottles safely packed in a labelled bag for review during your admission
- The contact information for your designated contact person with whom we can share your information
- Your provincial health insurance card and proof of any other health insurance

Prepare for your surgery by:

- Removing any make-up, nail polish or perfumed skin products
- Leaving all your valuables at home

When you go to surgery, your family will be asked to take home all your belongings, including the bag of medications you brought with you.

Once you have been transferred out of the Cardiac Surgical Intensive Care Unit (CSICU), your family can bring you your housecoat, shoes, walking aid and personal items that you usually use.

Wearing a Bra

Some women are uncomfortable because the weight of their breasts seems to pull at the chest incision. In this case, wearing a bra may decrease the discomfort. Other women find wearing a bra uncomfortable because of the breastbone incision. Putting gauze over the incision where it comes in contact with your bra may help. Wearing a cotton sports bra may be more comfortable. Front closing bras are easier to put on. Wearing a bra one size larger may also be more comfortable for you. Another alternative is buying a bra extender so that you will be more comfortable.

WHAT TO EXPECT WHILE AT THE HEART INSTITUTE

KEY MESSAGES

- Your family/designated contact person will be updated by the surgeon after your surgery is complete.
- After surgery, you will stay in the Cardiac Surgery Intensive Care Unit (CSICU). Once your condition improves, you will be transferred to a nursing ward (H3 or H4).
- Visitors must check in with the volunteers at the front desk to visit you in the CSICU.

Although every patient's situation is unique, the information below will give you a general idea of what you can expect throughout your admission and surgery at the Heart Institute.

Information for your family members and contact person is also included in this section so they know what to expect as well.

Some patients are admitted for surgery on the day of their operation because they have been assessed in the Pre-Admission Unit the week before. Other patients are admitted to the Heart Institute a day or two before the operation. Either way, the preparation is the same.

The Evening Before Surgery

You may:

- Receive visits from your surgeon, a resident, the anesthesiologist and the nursing coordinator
- Have additional diagnostic tests if not already completed
- Shower with an antiseptic soap
- Not eat or drink after midnight
- Rinse your mouth with an antiseptic mouthwash

On the Day of Your Surgery

What You Can Expect

- Removal of hair on your chest, groin and legs with a clipper
- Another shower with an antiseptic soap
- Medicine to help you relax before you go to the operating room
- Rinse your mouth with an antiseptic mouthwash
- After you arrive in the operating room, two intravenous lines will be started. You will be asleep shortly after this.

What Your Family and Contact Person Can Expect

Your family members and designated contact person can stay with you before you go to the operating room.

Once you leave to go to the operating room, your family or designated contact will be expected to remove all your belongings from your room. You will stay in the intensive care unit at least overnight.

During your operation, your family and your contact person are welcome to wait in the Family Lounge on the main floor. Please check in with the volunteers at the front desk. Your family or designated contact will be responsible for keeping your other family members informed of your progress.

Anesthesia

Medications

Like all surgery involving general anesthesia, you will be instructed not to eat or drink anything after midnight before your surgery. The anesthesiologist will review your current medications and inform you or your nurse as to which ones you should take with a small sip of water on the morning of your surgery.

Before you go to the operating room, you will receive medicines to help you relax and make you feel sleepy.

When you arrive in the operating room, you will meet several nursing and technical support staff in addition to your anesthesiologist. If you have any concerns about pain, angina, difficulty breathing, nausea or anxiety, please share these concerns with your anesthesiologist.

Intravenous Anesthesia

Before putting you to sleep, the anesthesiologist will insert several intravenous lines when you arrive in the operating room.

Breathing Tube and Machine

After you are asleep, you will be connected to a breathing machine (ventilator) by a breathing tube placed in your mouth and down your trachea (windpipe).

Your anesthesiologist will take great care in inserting the breathing tube in your mouth. However, you should be aware that in extremely rare cases some minor chipping or grinding of upper teeth may occur. This is why we ask about dental caps, dentures or loose teeth.

Blood Products

The heart-lung machine has a tendency to damage red blood cells, clotting cells and clotting proteins. If this happens, you may require blood products from Canadian Blood Services. The current risk of contracting AIDS, HIV or hepatitis is very small. These blood products are given only when necessary and when the benefits outweigh the risks. You will be told before you go home whether you received these blood products. The blood bank leaves a card on your chart for your records.

Should you have any further questions regarding anesthesia, please ask your nurse to have the anesthesiologist come and speak with you.

After Your Surgery

After your operation, three pre-arranged contacts are made:

- The **surgeon** will see your designated contact person, if they are waiting in the Family Lounge at the Heart Institute, or phone them after the surgery. Unless you have been told otherwise, the operation takes four to six hours. One hour after your contact person has spoken to the surgeon, they may go see you in the Cardiac Surgery Intensive Care Unit.
- The **nurse** will phone your designated contact person between **9:00 p.m. and 10:30 p.m.** the evening of surgery to give a progress report and again the morning after your surgery between **9:00 a.m. and 10:30 a.m.** At that time, the nurse may be able to tell you about the plans for the day, for example, whether you will stay in the CSICU or be transferred to a nursing ward.

In the Cardiac Surgery Intensive Care Unit

After the surgery, you will be taken to the Cardiac Surgery Intensive Care Unit (CSICU). Typically patients stay in this unit overnight, but some patients may need to stay longer.

While in the CSICU, you can expect to have:

- A breathing tube in your mouth that is connected to a breathing machine (ventilator). You will not be able to talk until this tube is removed. Once you are awake, able to follow directions and breathing well enough on your own, the tube will be removed. There will be a nurse with you one-on-one until this tube is removed.
- Special monitoring equipment and intravenous lines
- A tube in one of your nostrils which goes into the stomach to keep it empty
- A tube in your bladder to drain urine
- Drainage tubes below your incision
- Temporary pacemaker wires

Once the breathing tube is removed, you will:

- Receive oxygen by mask
- Start deep breathing and coughing exercises and leg exercises
- Gradually start drinking fluids starting with ice chips

Your nurse will continue to give you pain medicine regularly. Let the nurse know if you are uncomfortable.

The stress related to hospitalization, surgery itself and some medications can cause glucose to rise in our blood. If the blood glucose levels rise above 10, Insulin is started intravenously, even in those who are unaware that they have diabetes. It may just be short term. It is important to maintain glycemic control to reduce risk of infection and promote healing.

For Visitors to the CSICU

Visitors should check with the volunteers at the front desk in the main lobby (Ruskin St. entrance). The volunteers will call the CSICU to arrange the visit. Your visitors must follow this procedure each time they wish to visit.

Your visitors may be asked to wait at times while care is being given to you. They may see you for short periods of time (two people at a time). No children, please.

Before entering, visitors must use the hand washing gel. Any family members that are sick should stay at home. Heart surgery patients are especially susceptible to infection.

There is no visiting between 6:45 a.m. and 7:45 a.m. and between 6:45 p.m. and 7:45 p.m., while the nurses are giving patient reports at the change of shift.



IMPORTANT

To protect your health, your family members cannot visit you if they have a cold, fever, diarrhea, cough or any other sign of infection.

Recovery on the Nursing Ward

You will be transferred to the nursing ward when you are awake and stable. This typically occurs the day after surgery. On the nursing ward, you will begin to return to your normal physical activities. For a short period, you may receive oxygen by mask or nasal prong as needed.

During your recovery time, we will concentrate on teaching you all the skills needed to help you prepare for recovery at home. Also, we will work with you on walking properly, deep breathing and coughing exercises. You will progress with your diet gradually. If you feel nauseated, let your nurse know. The monitoring equipment, drainage tubes and some intravenous tubes will be removed as you progress through your recovery.

You will notice a whiteboard on the wall in your room for each patient. This will have information about your nurse, your physician, and your progress. You and your family should feel free to read the board and ask questions if necessary. You may also make notes on the board so you remember to ask questions.

It is important to take your pain medication regularly during this time so that you will be comfortable while doing recovery activities. Make sure you let the nurse know if you are uncomfortable.

Before your discharge, you and your family should attend a discharge class, which will prepare you for going home. The class times for all Heart Institute education programs are posted in each room.

PREDIABETES AND DIABETES

All patients are screened for prediabetes and diabetes with a blood test called Hemoglobin A1c (A1c). This non fasting test measures the amount of glucose that has “stuck” to the red blood cell over the past 120 days. The diagnosis of prediabetes is 6.0- 6.4% and diabetes is 6.5% or greater.

If you already have diabetes or are found to have diabetes, a heart healthy, diabetes diet will be prescribed for you. A finger prick, to test your blood for glucose before each meal and before sleep each day will be done and recorded. While on the ward, medications and insulin will be adjusted to maintain your blood glucose readings in the range of 5 – 8 mmol/l range. If your blood glucose is not at target, you may be seen by the Advance Practice Nurse for Diabetes or the Endocrinology team. At discharge, if you are not already working with a Diabetes Team, you will be referred to one and an appointment will be made in our Diabetes Clinic to see an Endocrinologist.

If you are found to have prediabetes, you too will be referred to the community diabetes program. This will be provided closer to your home, so you can learn more on how to prevent /delay the onset of going on to develop diabetes in the future.

If you have any concerns about going home after your surgery, ask your nurse to refer you to a social worker. They can help you with:

- Home-based physiotherapy or nursing requirements
- Community resource information
- Coordinating any community care that you may need upon discharge
- Drug-related costs
- Any other concerns you may have with respect to going home

For Visitors to the Nursing Wards (H3 and H4)

Visiting Hours: 10:00 a.m. to 1:00 p.m. and 2:00 p.m. to 8:00 p.m.

Rest Period: 1:00 p.m. to 2:00 p.m.
Please do not visit during the rest period.

After surgery, patients are very tired, and finding times to rest during the day can be difficult. The rest time from 1:00 p.m. to 2:00 p.m. is very important to help in their recovery.

We ask that you not visit during this time.

Only two visitors at a time at bedside. Family members who are ill should stay at home.

Before Surgery Physiotherapy

The primary role of physiotherapy is to help you regain your strength and return to your normal level of activity after your surgery. Exercise will help prevent common problems resulting from general anesthetic and prolonged bed rest, including muscle weakness and joint stiffness. More serious medical issues include blood clots and lung infection.

Exercise will also promote a feeling of well-being and encourage you to add regular exercise to your daily life. It is necessary that you take an active role in your recovery.

Deep Breathing Exercises

It is important to take deep breaths after surgery to get air into the bottom of the lungs. This will help prevent lung collapse and pneumonia.

Take a deep breath in through your nose until you cannot take in any more air. Purse your lips and slowly blow out through your mouth (as if blowing out a candle). Your stomach should rise as you breathe in and fall as you breathe out. Repeat for a total of ten deep breaths per hour.

Coughing

Coughing helps to clear phlegm from your lungs and will help to prevent lung infections. It is common after surgery to have extra phlegm in your lungs, especially for the first few days.

When you cough, hold your pillow (“teddy”) firmly against your chest. Take a deep breath in and cough out. You should cough two to three times every hour that you are awake. Your “teddy” helps to support your incision and lessen the discomfort you may have when coughing.

Before Surgery Physiotherapy Continued...

- It is important for you to remain as active as possible in the weeks before surgery. If you are moving well before surgery, it is more likely that your recovery will be quicker and easier.
- Ensure activity does not bring on your symptoms (i.e. angina, shortness of breath, chest pain, fatigue, etc...). Always work to a level just below your symptoms. Listen to your body.
- Walking is one of the best cardiovascular exercises you can do.
- If you cannot walk without feeling symptoms, or if you never have any symptoms, consider chair exercises such as marching in your chair.

Before Surgery Walking Program

- Try to take at least one walk for exercise daily. Build a habit of always walking at the same time every day!
- Start with a walk time and a comfortable pace that you can manage without feeling any symptoms. For example, start with 10 minutes of easy walking. Try to do this every day. Walk times will be different for everyone.
- At the end of 2 or 3 weeks, if you feel the walking is becoming easier you may then slightly increase your walk time by a few minutes, and then carry on at that time. Remember to work at a level that does not cause you any symptoms.

IMPORTANT

Abnormal responses to exercise may include:

Nausea, headache, dizziness, chest pain or palpitations.

If you notice any of these, **stop and rest** until the symptoms decrease. If these symptoms persist or if you feel unwell - call 911 or go to your nearest emergency room. If you have any questions, please call the nursing coordinator at the 24-hour access number: 613-696-7000, press 0 and ask for the nursing coordinator.

Before Surgery Exercise Program

Some aspects of your surgery like positioning and recovery in bed may cause you some unexpected muscle & joint soreness. In order to help prepare you for this, we have provided you with a simple exercise program to help keep your joints moving well before surgery. You can do these exercises once or twice per day, as long as they don't make you feel sore or overly tired. If any of these exercises cause you pain, just stop doing that particular exercise. Speak to your physiotherapist if you have any questions.

BREATHING | DIAPHRAGMATIC

Reps: 5 | Frequency: 1-2 x per day

Preparation:

- Sit comfortably in a chair.
- Place your hands on the front of your stomach

Execution:

- Take a slow deep breath in through your nose (as if you were smelling flowers), expanding your stomach into your hand as you breathe.
- Exhale slowly through pursed lips (as if you were blowing out candles). You should feel your belly slowly relax again.



Hands on stomach



Breathe stomach into hands

NECK ROTATION ROM

Reps: 3 each side | Frequency: 1-2 x per day

Preparation:

- Sit with good posture

Execution:

- Look over your left shoulder as far you comfortably can
- Keep your shoulders relaxed
- Now look over your right shoulder as far as you comfortably can



Start position



Turn neck right



Turn neck left

NECK SIDE BENDING

Reps: 3 each side | Frequency: 1-2 x per day

Preparation:

- Sit with good posture

Execution:

- Slowly lower your left ear to your left shoulder as far as you comfortably can
- Keep your shoulders relaxed
- Raise your head up, then lower your right ear to your right shoulder as far as you comfortably can



Start position



Bend neck right



Bend neck left

SCAPULAR RETRACTION

Reps: 3 | Frequency: 1-2 x per day

Preparation:

- Sit comfortably with a straight back and shoulders relaxed

Execution:

- Pull shoulder blades back and down (squeeze shoulder blades together)
- Don't hunch your shoulders



Shoulders relaxed



Pull shoulder blades back and down

SHOULDER INTERNAL ROTATION STRETCH (TOWEL)

Reps: 3 each side | Frequency: 1-2 x per day | Hold: 3-5 seconds

Preparation:

- Sit with good posture
- Hold a towel in one hand and throw it over your head
- Grasp the dangling end with the other hand (to the side)

Execution:

- Use the upper arm to very gently pull bottom of towel
- Hold for 3-5 seconds



Start position

an



tru

Create stretch in lower arm by gently drawing on towel with upper arm

TRUNK ROTATION

Reps: 3 x each side | Frequency: 1-2 x per day

Preparation:

- Sit on a chair with good posture
- Arms crossed on chest

Execution:

- Twist to look behind you
- Now twist the other way



Sit on a chair with good posture



Twist to look behind you



Now twist the other way

KNEE EXTENSION CONCENTRIC

Reps: 5-10 | Frequency: 1-2 x per day | Hold: 3 seconds

Preparation:

- Sit in a chair with good posture

Execution:

- Straighten your knee as much as you can
- Hold for 3 seconds
- Relax your knee back to the start position in a controlled manner



Sit with good posture



Straighten knee

SQUAT (WITH SUPPORT)

Reps: 5-10 | Frequency: 1-2 x per day

Preparation:

- Stand with good posture
- Feet shoulder width apart, knees slightly bent
- Rest hands on chair or counter for support

Execution:

- Initiate squat by bending at the hip
- Bend knees slightly, but not too much (you should still be able to see your toes)
- Squat as low as you can under control
- Rise up straight



Start position



*Squat - Head up -
Buttocks out - Knees bent*

APPENDIX 2: TOP 10 TIPS FOR HEALTHY EATING

Making healthy food choices doesn't have to be overwhelming. These tips will get you on your way.

- 1. Cook at home more often.** Cooking at home makes it easier to avoid processed foods. It can be as simple as scrambled eggs, whole grain toast, tomato and cucumber slices.
- 2. How you eat is as important as what you eat.** Enjoy mealtimes and the food you eat! Don't multitask. Avoid distractions like your computer or TV while you eat. Sit down and enjoy a meal at the table. If you live with others, make family dinner a priority.
- 3. Listen to your body.** Eat when you're hungry and stop when you feel satisfied.
- 4. Eat at regular times.** Eat breakfast within 1 to 2 hours after waking up. Don't wait too long between your meals. It's harder to make healthy choices when you're hungry.
- 5. Plan healthy snacks.** Try whole grain crackers and peanut butter or hummus, a piece of fruit and a few unsalted nuts, or frozen berries and plain yogurt.
- 6. Eat a variety of vegetables and fruit at every meal.** Enjoy brightly coloured whole vegetables and fruit. Fresh or frozen, try them in different ways—raw, roasted, or sautéed.
- 7. Eat whole grains more often.** Switch to brown rice, whole wheat pasta, dark rye bread or oatmeal. Try something new in your soup, salad or casserole like quinoa, bulgur or barley.
- 8. Eat fish at least twice a week.** Trout, salmon, tuna and sardines are some tasty options. Try fresh frozen or canned.
- 9. Include legumes like beans, chickpeas, lentils, nuts and seeds more often.** Add them to salads, soups and grain dishes such as rice, quinoa or couscous. Legumes can replace meat in your meals. Try a vegetarian chili.
- 10. Don't be afraid of fat.** You need fat for good health and it adds flavour to your cooking. Use plant-based fats such as olive or canola oil.

APPENDIX 3: 10 TIPS FOR MANAGING STRESS

- 1. Exercise regularly.** Exercising at least three to five times a week helps to relax and condition your body and mind.
- 2. Breathe deeply.** Take a few deep breaths. Notice how it changes how you feel.
- 3. Be aware of quick fixes.** Try to avoid the tendency to consume more alcohol and non-prescribed drugs in stressful times.
- 4. Notice your thoughts.** Reflect on how you think about what's causing you stress. A trusted person or a counsellor can help you see things in a new way.
- 5. Relax the muscles in your body.** Stress can make your body tense. Try to relax the areas where you carry the most stress.
- 6. Recognize what you can't control.** Reflect on what you can control, and let go of things beyond your control.
- 7. Take a break.** Give yourself permission to nap, listen to music, read, meditate or just have some quiet time.
- 8. Make time for things you enjoy.** Set time aside for hobbies or learning something new.
- 9. Avoid exposure to stress.** If possible, avoid unnecessary triggers for stress, such as distressing TV shows.
- 10. Evaluate your commitments.** Consider how you spend your time and letting go of some commitments.

HEART INSTITUTE PATIENT ALUMNI

WE CAN HELP. WE'VE BEEN THERE.

The Patient Alumni are a diverse community of current and former University of Ottawa Heart Institute patients and their families, friends and caregivers. We gratefully support the Institute by sharing information on advancements in the prevention and treatment of heart disease and by designating funds for projects and services that improve patient comfort and care.

By joining the Alumni, you will become part of a very unique community!

The Heart Institute is the only hospital in Canada that has formed an alumni group to stay in contact with discharged patients and their families. For over 40 years, the Heart Institute has delivered world-class care to thousands of patients. As Alumni members, we wish to stay in touch, stay informed, and contribute to the Institute's quality of care and future success.

WHY JOIN THE ALUMNI?

Alumni membership is free of charge, thanks to the partnership and financial support of the Heart Institute and its fundraising Foundation.

As an Alumni member, you'll get up-to-date information through our:

- e-letters
- Websites
- Lectures, courses and special events

By joining, you will also be able to share information and experiences with other Alumni members through our unique private social networking site, at <http://community.ottawaheart.ca>

For more information and access to free membership, visit our website, ottawaheartalumni.ca

Or contact us at:

Email: alumni@ottawaheart.ca

Telephone: 613-696-7241



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