



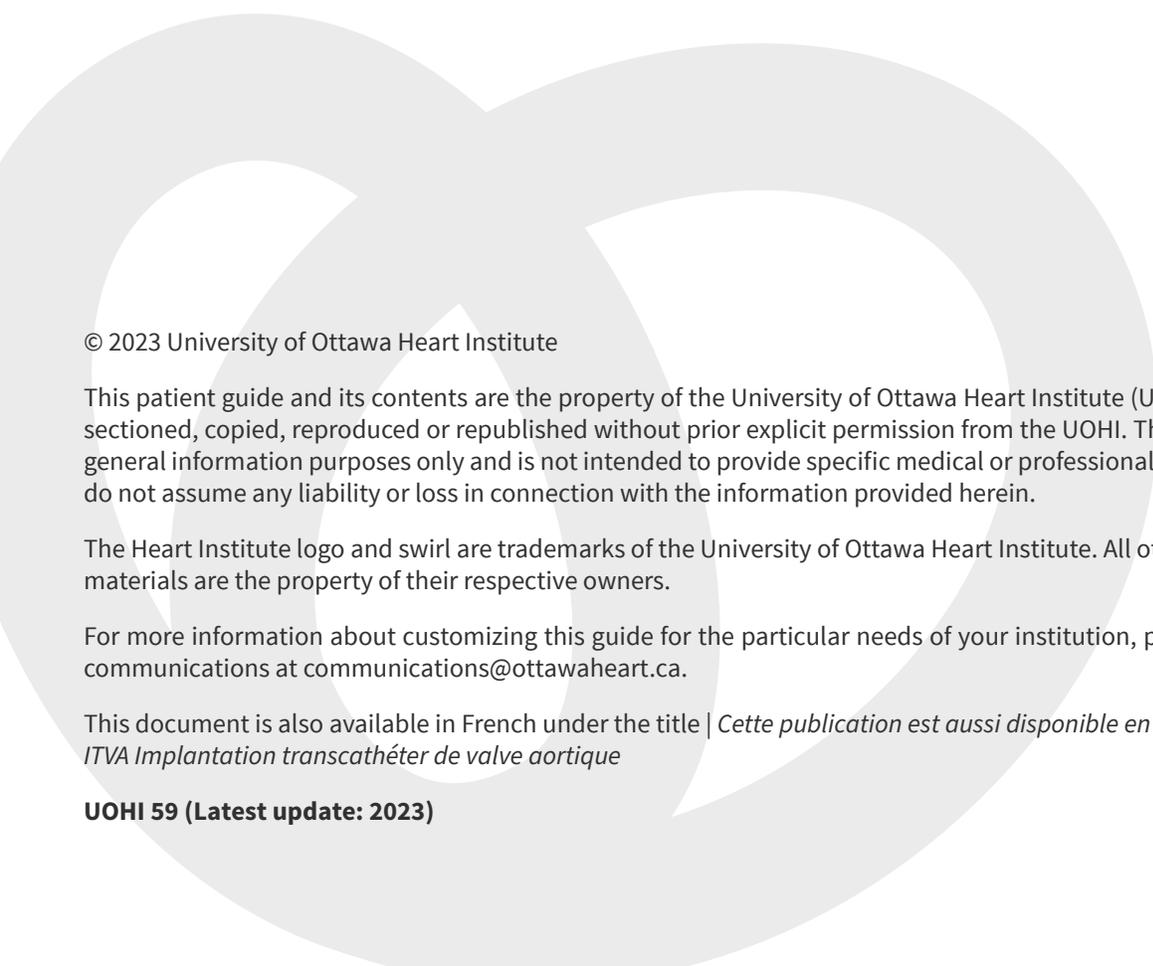
UNIVERSITY OF OTTAWA  
HEART INSTITUTE  
INSTITUT DE CARDIOLOGIE  
DE L'UNIVERSITÉ D'OTTAWA

# TAVI

## Transcatheter Aortic Valve Implant



A GUIDE FOR PATIENTS AND FAMILIES



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This document is also available in French under the title | *Cette publication est aussi disponible en français sous le titre :*  
*ITVA Implantation transcathéter de valve aortique*

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# PLEASE BRING THIS BOOKLET WITH YOU TO THE HEART INSTITUTE

Patient name: \_\_\_\_\_

Name of procedure: Transcatheter aortic valve implant (TAVI)

Date of procedure: \_\_\_\_\_

Cardiologist: \_\_\_\_\_

Cardiac surgeon: \_\_\_\_\_

Structural heart nurse specialist: 613-696-7000 ext. 18826



## **IMPORTANT**

Please contact the structural heart nurse specialist during working hours.

After hours and on weekends and holidays, you may contact the nursing coordinator at 613-696-7000.

Press 0 and ask for the nursing coordinator.

The nursing coordinator is available 24 hours a day if you have questions or concerns.

# DISCHARGE CHECKLIST

Before you are discharged from the Heart Institute, please make sure you have:

- Reviewed the TAVI Stoplight and Weight Tracker with your nurse.
- Received and reviewed a copy of the TAVI patient guide.
- Received your after visit summary and prescription.

You will receive an after visit summary (AVS) upon discharge. It will contain information about your hospital stay and follow-up appointments as well as your medication list. If new medications are added, you will receive a prescription that you may take to your pharmacy. Please bring your AVS sheet to your follow-up appointment with your primary care provider.

- Reviewed your medications with your nurse.
- Discussed attending a cardiac rehabilitation program.
- Arranged your transportation home. You cannot drive for two to four weeks after your TAVI procedure. You will need someone to help you with driving during that time.
- Have had all of your questions answered.

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# REFERRAL FOR TRANSCATHETER AORTIC VALVE IMPLANT

You have been diagnosed with a condition called aortic stenosis—narrowing of the aortic valve. Your doctors have recommended a valve replacement using a transcatheter aortic valve implant (TAVI) to treat your aortic stenosis. The purpose of this guide is to help you and your family or caregiver prepare for your stay at the University of Ottawa Heart Institute and for your recovery at home.

## ABOUT AORTIC STENOSIS

Your heart contains four valves. These valves make sure the blood flows through your heart in the correct direction. The aortic valve is on the left side of your heart and opens when the blood is pumped from your heart to the rest of your body.

Aortic stenosis is the term used when the aortic valve is narrowed or cannot open properly, so the blood can't flow easily out of your heart to the rest of your body.

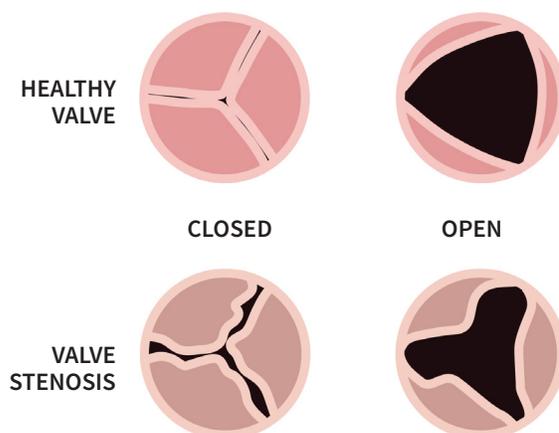
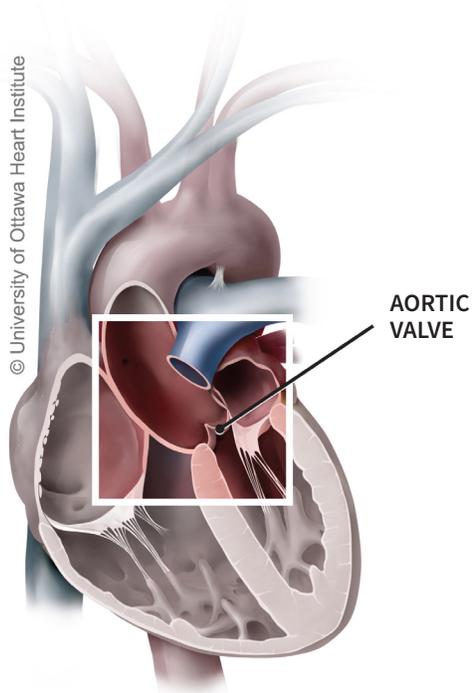
Aortic stenosis puts extra strain on your heart and can affect your blood circulation. This can result in breathlessness, swollen ankles, chest pain, dizziness, and sometimes, and sometimes blackouts.

The type of procedure your cardiologist and cardiac surgeon have recommended for you is called a transcatheter aortic valve implant or TAVI for short.

## ABOUT TAVI

For people with aortic valve problems, the usual treatment is open heart surgery to repair or replace the aortic valve.

However, open-heart surgery may not be the best option for people who are older or unwell, or who have already had one or more heart surgeries in the past.



The TAVI procedure for implanting aortic valves through a catheter is less invasive and may reduce your recovery time and length of hospital stay.

### TRANSCATHETER

Transcatheter means the new valve is guided into place with a catheter instead of the traditional open-heart surgery.

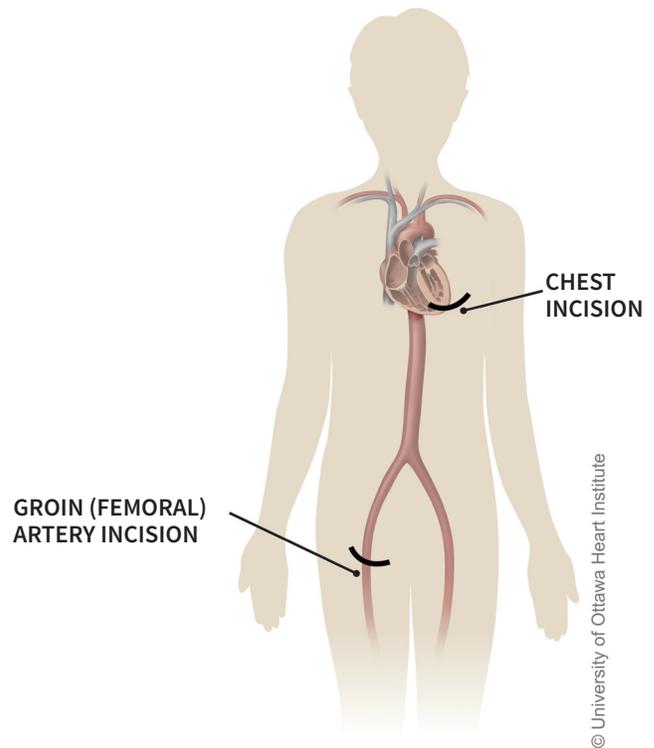
Usually, the catheter is inserted into a large blood vessel in your groin or through a small incision in your chest.

### TRANSCATHETER AORTIC VALVES

Transcatheter aortic valves are designed to be implanted using a long, narrow tube called a catheter. The catheter can be inserted through a large artery in your groin or through a small incision in your chest.

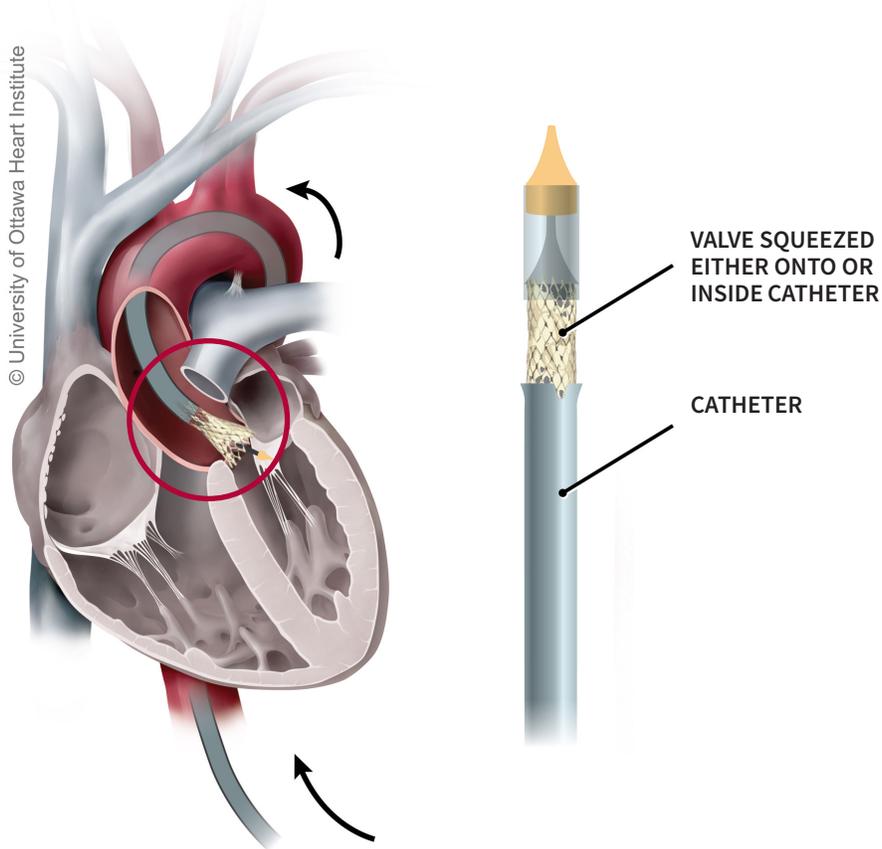
The valve is made of tissue from the heart of either a cow or a pig. The natural tissue is re-engineered and attached to a flexible expanding mesh frame.

Below are two examples of the valves that are used in a TAVI procedure.



To insert it into the heart, the valve is squeezed around or inside a catheter.

Once the new valve is implanted, the catheter is removed. The valve starts working immediately after the catheter is removed.



# THE TAVI TEAM AT THE HEART INSTITUTE

At the University of Ottawa Heart Institute, the TAVI procedure is usually done by a medical team that includes both a cardiologist and a cardiac surgeon. Depending on the day your procedure is booked, the cardiologist and surgeon may be different from the doctor you met at your first appointment.

## Structural heart nurse specialist

While you are waiting for your TAVI procedure, expect to be contacted by the structural heart nurse specialist. They will work with you and your family to coordinate your preparation for the procedure and to help you plan for your safe recovery after discharge from the hospital. While you are waiting, the structural heart nurse specialist is your first contact point and is available by phone to answer questions or assist as needed.

## TAVI rounds

Once all your appointments and tests are complete, your doctor will discuss your particular situation at the TAVI rounds meeting. The TAVI rounds includes all the TAVI doctors along with doctors who specialize in reading X-rays and echocardiograms, the structural heart nurse specialist, other nurses, and other support staff.

The purpose of the meeting is to review and discuss all of your information and recommend the best option for treating your aortic stenosis.

## Determining the best option for treatment

Although the TAVI team makes recommendations, the final decision for your treatment will be made jointly by you and your doctor. Before making your decision, make sure your questions are answered and that you are clear about how the TAVI procedure will help you. See Appendix 2 for a list of questions to ask your doctor.

# WHAT ARE THE RISKS AND POSSIBLE COMPLICATIONS OF A TAVI PROCEDURE?

Before giving your consent to have a TAVI procedure, your doctor will explain the possible risks and ask you for directions should you experience a life-threatening complication. Below is a list of some of the complications that can happen during a TAVI procedure.

**Blood vessel injury/bleeding:** The TAVI catheter is placed in a large artery in your groin, therefore there is a risk of injuring the artery and causing bleeding or blockage, which may require surgical repair.

**Kidney injury/failure:** During the TAVI procedure, a special dye is injected into your bloodstream to make your aortic valve and blood vessels show up under X-ray. This dye can be toxic for your kidneys, which, in rare cases, can lead to dialysis.

**Need for a permanent pacemaker:** When the TAVI valve is implanted, it can sometimes interfere with the electrical conduction system in your heart. If this happens, you will need to have a permanent pacemaker.

**Stroke:** During the TAVI procedure, there is a possibility some of the calcified plaques that have built up around your aortic valve may break away and become lodged in small arteries in your brain. This may lead to a stroke.

**Death:** In some cases, life-threatening complications may occur while you are having the TAVI procedure.

## What happens if a life-threatening complication occurs during my TAVI procedure?

A TAVI is a complex procedure with possible life-threatening complications that would require emergency surgical intervention to save your life.

**Some examples** of these complications include:

- Tear of the wall of the aorta
- Tear of the root of the aorta where the TAVI valve is placed
- Perforation or tear to the heart's tissue
- Dislodgement of the TAVI valve after it has been placed

If this type of complication occurs, the decision about whether to proceed to emergency surgery will be made by your doctors according to your wishes and consent.

Emergency surgery, in this setting, carries a greater risk of death and other complications. As such, it is essential you and your family or caregiver have a discussion about what you want.

You will be asked, at the time of the consent signing, whether you wish to have emergency surgery in the event of a life-threatening complication. This will help your doctors decide how to proceed if this unlikely situation is to occur.

# PREPARING FOR YOUR TAVI PROCEDURE

## Dental visit

If you have any of your own teeth and have not seen your dentist in the last six months, book a dental appointment before the valve implant. If your dentist says you need dental work done (i.e., extractions, an infection treated, etc.), this needs to be completed before the procedure.

## Waiting for a TAVI procedure

The wait times for a TAVI procedure at the Heart Institute are carefully monitored by the TAVI team. The length of time that you are waiting for your TAVI procedure will depend on how urgent your condition is. For people who are in stable health, the average wait time is three to four months.

While you wait for your procedure, you may prepare by watching the following TAVI pre-hab video: [ottawaheart.ca/tavi-guide](http://ottawaheart.ca/tavi-guide).

The Ontario Cardiac Care Network keeps track of TAVI wait times throughout the entire province. If you would like more information about options or wait times at other TAVI centres, ask the structural heart nurse specialist for details.

## BOOKING DATES AND CHANCE OF CANCELLATION

You will be notified of your tentative procedure a few weeks in advance. Final confirmation of your date and time will occur the week before your procedure.

In some cases, booked TAVI procedures need to be cancelled because there are more urgent patients or other emergencies.

Having your procedure cancelled is difficult for both you and your family members. The decision to cancel a procedure is not made until every possible option has been considered. If this happens, we will notify you immediately and we will make every effort to reschedule your procedure for the earliest possible date.

## WHAT YOU SHOULD DO WHILE WAITING FOR YOUR TAVI PROCEDURE

The waiting period can be stressful for both you and your family or caregiver. It is normal to worry and to have ongoing concerns. If you have questions or concerns about the TAVI procedure or about the wait times, you can contact the structural heart nurse specialist at any time during regular business hours. It is better to get your questions answered early than to wait until the morning of the procedure.

### Keep track of your symptoms

Over time, as your aortic stenosis progresses, your symptoms, such as tiredness and shortness of breath, may worsen, and you may find it harder to do your typical everyday activities.

If you experience a gradual worsening of your symptoms, contact your family doctor. You may need to be checked more frequently, or some of your medications may need to be adjusted.

Call 9-1-1 or go to the nearest emergency department if:

- You begin to have chest pain or discomfort that is new. Nitro spray is not recommended in patients with severe aortic stenosis and no coronary artery disease. Please discuss the use of nitro spray with your doctor.
- You have shortness of breath all the time, even while you are resting.
- You start to have dizziness that is new or if you have any fainting spells.

If you have a sudden change in your condition, or if you are admitted to the hospital, ask a family member to notify the structural heart nurse specialist.

### **Maintain your health**

Stay as active as you can, even if only for short periods of time. Check with your doctor about what level of activity is best for you. Slow down or reduce your activity if you become short of breath, have chest pain or feel faint.

### **Eat a healthy diet**

Good nutrition before your TAVI procedure is important and may help you to heal more quickly. It is important to make sure your body is getting the right nutrition at this time. Here are some tips that will help you eat well before your TAVI procedure.

- Eat at regular times. Eat breakfast within one to two hours after waking up. Don't wait too long between your meals. It's harder to make healthy choices when you're hungry.
- Meals don't have to be complex to be nutritious. It can be as simple as toast with peanut butter, fruit and a glass of milk, or scrambled eggs with whole wheat crackers, sliced tomatoes and a yogurt.
- Plan healthy snacks. Try whole grain crackers and peanut butter or hummus, a piece of fruit and some cheese, or frozen berries and plain Greek yogurt.
- Include protein sources at 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 extras. The meat is ready to reheat and add to dishes when you need it.
- Have easy to prepare meals and snacks readily on hand for when you don't feel like cooking, such as granola bars, nuts, Greek yogurt, pudding 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 your 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 doctor has restricted the amount of fluid and salt in your diet, continue to follow those recommendations.

## **Prediabetes and diabetes in heart disease**

Like type two 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 four 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

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 four and seven millimoles per litre. If you are checking within two hours of a meal, it should be between five and ten millimoles per litre. 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. While you are waiting for surgery is an ideal time to improve your glycemic control.

### **If you are losing weight without trying**

Sometimes, when you are feeling sick, you can lose your appetite. You may lose weight quickly and without trying. If you notice this is happening to you, tell your doctor or the structural heart nurse specialist. They may refer you to see the registered dietitian in the Division of Cardiac Prevention and Rehabilitation at the Heart Institute.

Below are some tips to help in the meantime.

- Eat smaller amounts of food more often. Try eating every two to three hours.
- Eat more food when your appetite is best.
- Make every bite count. Eating half of a meal is still better than having nothing.
- Ideas for nutritious snacks include whole grain crackers and peanut butter or hummus, a piece of fruit and some cheese, frozen berries with granola and plain Greek yogurt or an egg salad, chicken salad or tuna sandwich.

- Opt for milk, milkshakes, yogurt beverages or nutritional supplements like Ensure instead of low-energy fluids such as water, broth, tea or coffee.
- Have easy-to-prepare meals and snacks readily on hand for when you don't feel like cooking. Suggestions are granola bars, nuts, Greek yogurt, pudding 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 your meals.
- Add fats and oils at each meal. Top your salads, vegetables, pasta or rice with a few teaspoons of liquid oil such as olive or canola. Spread margarine or butter on your bread, vegetables and potatoes. This will increase the energy content of your food.
- Avoid reduced-fat food such as food labelled "light," "low fat" or "fat free."
- Try adding powdered milk to your soups, breakfast cereal, puddings or scrambled eggs for extra protein.

### **Medications**

Continue to take all of the medications your doctor has prescribed. Talk to your doctor before starting any new medications or before making changes to your current list.

If you have diabetes, take your diabetes medication the way your doctor prescribed and keep track of your blood sugar.

### **Plan for your discharge and recovery**

The expected length of stay in the hospital after your transfemoral TAVI is typically one day. Plan to be discharged home the next day.

Your hospital stay may be longer if complications or concerns arise or if an alternative access is used.

Most patients tell us it takes about a month to feel fully recovered, but it can take up to three months for the heart to adjust to the new valve after a TAVI procedure.

If you live alone, arrange for a family member or friend to stay with you for a week after discharge. If this is not possible, consider convalescent care in the community. There are different convalescent options available.

If you need more information about convalescence or if you are worried about discharge, talk to the structural heart nurse specialist before you are admitted for your procedure.

## Pre-Admission Unit

The Pre-Admission Unit (PAU) will contact you to schedule an appointment closer to your TAVI date. This typically occurs within two weeks of the procedure.

The purpose of your appointment at the PAU is:

1. To meet with the anesthesia doctor and review the best anesthesia options for you and the type of TAVI procedure you are having.
2. To have final tests done to ensure you are ready for a TAVI procedure.
3. To do a final check of your medications.
4. To answer any final questions you may have.

Expect to be at the Heart Institute for about two hours. For your appointment, please bring:

- All of your medication bottles including any vitamins or supplements.
- Your provincial health insurance card and proof of any other health insurance.
- Any walking aids you regularly use.
- It is also helpful to bring a family member or a friend who can help you by taking notes or asking questions. Please check with the PAU unit or structural heart nurse specialist for up-to-date visitation policies.

Before your PAU appointment, the structural heart nurse specialist will call you to complete an assessment and to talk to you about the TAVI procedure and what to expect while you are in hospital as well as your plans for discharge and recovery at home.

If you have not heard from the structural heart nurse specialist, please call 613-696-7000 ext. 18826.

## Preparing for your stay at the Heart Institute

Expect to stay at the Heart Institute for one day after your transfemoral TAVI, or longer if an alternative access is used. In some cases you may be discharged home the same day. This same day discharge would be arranged with you prior to the booking of the TAVI procedure. This is not an option for all patients. Please discuss with the structural heart nurse specialist and your doctor if you have more questions.

When you are admitted, bring only the personal items you will need along with your slippers (with non-slip soles), housecoat, glasses, hearing aid, and any walking aids you use.

Make sure you also bring:

- Your health card
- All of your medications
- The name and phone number of your contact person

Please bring this guide with you to the Heart Institute. The nurses will use it during your stay to guide you and your family as you are recovering from your procedure and preparing to go home.

Leave any valuable items at home. They could be lost or damaged. The Heart Institute is not responsible for loss or damage to personal belongings.

### **If you are coming in on the same day as your procedure**

Most people who have a TAVI procedure come to the Heart Institute the morning of the procedure. Once your procedure date is confirmed, you will be contacted the day before with final instructions about when to come in to the Heart Institute and where to present yourself. If you usually take medications in the morning, ask the staff for final instructions.

### **If you are coming in the day before your procedure**

In some cases, people are admitted the day before their TAVI procedure. If you are asked to come in the day before your procedure, call the admitting department at 613-696-7060 between 9 a.m. and 9:30 a.m. on the same day you will be admitted to learn when your bed will be available.

# WHAT TO EXPECT DURING YOUR STAY

## Before your implant procedure

### Giving consent

Before the procedure, the TAVI doctor will meet with you and go over both the benefits and risks of having a TAVI procedure. Once your questions have been answered and you agree to have the procedure, we will ask you to read and sign a consent form. Some people find it hard to read and take in all this information right before the procedure. Let us know if you need help with reading the form before you sign it.

Before you are taken to the cardiac hybrid operating room, the nurse may give you some medication which may relax you and make you sleepy.

## During the implant procedure

Your implant procedure will probably take about two hours (occasionally it takes a little longer). It is done in the cardiac hybrid operating room.

Once you are in the procedure room, the anesthetist will start your anesthesia.

If you are having local anesthesia, the doctor will use a type of medication that helps you relax and feel sleepy. You will also have “freezing” medication in your groin so you do not feel any pain. In fact, you may sleep right through the whole procedure.

With some types of TAVI procedures, you may require general anesthesia. This means you will receive medications that will completely relax all of your muscles, including your breathing muscles, so that you are asleep for the procedure.

All other equipment such as intravenous lines, a heart monitor, and a temporary pacemaker will be put in after you are asleep.

Once your implant procedure is completed, you will be transferred to the unit you will recover in, most often the Regional Referral Centre.

## For the family/contact person

Once your procedure is completed, the doctor will want to contact your family to let them know how you did. The doctor can either talk to your family in person or call a designated family member on the phone.

If you want the doctor to call a specific family member or caregiver, the staff will ask you for the name and phone number where your family member can be reached.

The staff will ensure those arrangements are made with you and your family before your procedure starts.

# AFTER THE IMPLANT PROCEDURE

## Recovery in hospital

Most patients do not require intensive monitoring post procedure. These patients will be transferred to the Regional Referral Centre to be monitored. If this is your course of recovery, plan on only staying in the hospital for one to two days. Please discuss discharge planning with your family and the hospital staff on the unit before the procedure.

A small number of patients will need to recover in an intensive care unit. They will be closely monitored during their recovery phase. These patients often have had an alternative access TAVI procedure. The structural heart nurse specialist will explain this to you when your procedure is scheduled.

Please check with the nurse specialist about current visitation policies.

## HOSPITAL VISITS

Visits to the Regional Referral Centre or intensive care units are arranged by calling the recovery area in which the patient is receiving care. You may speak to the structural heart nurse specialist if you are unsure who to contact.

## PROGRESS REPORTS

While in hospital, we recommend you appoint one family member to act as a contact person. Your contact person can call the unit for updates. If you are unsure of the extension, please call, 613-696-7000 ext. 0 to transfer your call to the correct floor.

## AFTER YOUR PROCEDURE

For the first four hours after your implant procedure, expect the nurse to be constantly reminding you to keep both legs straight. This is essential to prevent bleeding from the insertion sites in your groin. There may still be some intravenous tubes in your groin.

Your nurse will be checking with you regularly to make sure you are comfortable. Let the nurse know if you are having any pain.

Depending on your progress, you will begin to gradually increase your activity with time. This will begin with sitting up in bed, then sitting in a chair and then walking.

Most of the specialized equipment will be removed once the procedure is done. After a few hours of bed rest, you will be able and expected to be up and moving. This will help expedite your discharge.

At first, you will be given clear fluids to drink, and when you can tolerate it, you will be able to return to a regular diet. This will likely occur later the same day.

If you are in the intensive care unit, most of the specialized monitoring equipment will be removed once you are ready for transfer to the nursing ward. Some patients may even be discharged home from the intensive care unit.

## Recovery

You will be able to gradually increase your level of activity with assistance. Every day you will be able to do more activity and walk farther. If you are having trouble with getting up and moving around, a physiotherapist may provide you with specific exercises and information to help you get back to your usual level of activity.

As your appetite improves, you will gradually resume your regular diet. You may wear a portable cardiac monitor for 48 hours that monitors your heart rate and rhythm.

Blood tests, X-rays and electrocardiograms (ECGs) will be done during your stay. Before you leave the Heart Institute, an echocardiogram or ultrasound of your heart will be done.

The nurse will check your insertion sites to monitor for any problems and teach you what to look for as you heal. A small soft lump at the site where the tube was placed for the procedure is normal. It is also normal to experience bruising at the site. This bruising will sometimes spread during the recovery period. If you have concerns about your procedure site, do not hesitate to discuss them with the healthcare team.

Notify your nurse or doctor if you have any of the following problems with the insertion site:

- An expanding lump or a persistent area of redness and warmth
- Yellow drainage from the insertion site
- Worsening numbness in your leg
- Severe discomfort at the insertion site

### IF YOU HAVE A CHEST INCISION

If you had a chest incision, the nurse will remove the dressing on the third day after your procedure. If there is no drainage, then it will be left open to the air. Keep an eye on your incision. Wash it gently every day with a non-drying soap, rinse, and pat dry.

Notify your nurse or doctor if any of the following occur:

- The incision becomes very red and tender
- The incision becomes more painful
- The incision starts to leak or drain pus
- You develop a fever

# GOING HOME

## Driving home

Make sure you have a family member, friend or caregiver ready to drive you home. The majority of patients will be discharged the **day after the procedure**. You may not drive for two to four weeks after your procedure. You will receive instructions upon your discharge.

## Managing at home

You and your family must start planning for your return home before your admission to the hospital. Most people who have this procedure say it takes them one to three months to recover.

## What to watch for

Examine your insertion site every day. It is normal for it to be slightly red and tender, a bit lumpy or bumpy, a little swollen, and occasionally, you may have some clear drainage.

You may remove the dressing after two to three days. You may see a strip across the incision. This will fall off on its own. If the incision is draining, you may apply a bandage. If you do so, update the structural heart nurse specialist or nursing coordinator.

You may shower after two to three days. No bathing (sitting in the tub) for at least one week. We do not want your incision submerged in stagnant water.

Call your doctor or the nursing coordinator immediately if you notice:

- A lump is getting bigger
- Any area of redness or warmth
- Any kind of yellow or pink drainage

**Pain/discomfort:** Expect the discomfort in your groin to gradually decrease as you continue to heal. If you begin to have more pain or any chest pain or breathlessness, contact your doctor or the nursing coordinator.

**Other symptoms:** Call your doctor or the nursing coordinator if you develop a fever or flu-like symptoms, such as feeling unusually tired.

### **CALL 9-1-1 OR GO TO THE NEAREST EMERGENCY DEPARTMENT IF YOU EXPERIENCE:**

- Unrelieved shortness of breath
- Shortness of breath while at rest
- Wheezing or chest tightness while at rest
- Needing to sit in a chair to sleep
- Feeling confused or disoriented

## Physical activity

Do not lift, push or pull anything that weighs more than ten pounds for the first five days after you go home.

Carry on with the physical activity plan you started in the hospital.

### WHY YOUR PHYSICAL ACTIVITY PLAN IS SO IMPORTANT

After your TAVI procedure, please follow the exercise program in this guide, which is designed to help you recover and get your energy back. Patients are referred to the Cardiac Rehabilitation Program after their procedure. They will contact you several weeks after you are discharged from the hospital.

Exercise helps you to:

- Feel less tired
- Feel less short of breath
- Sleep better
- Gain more energy to do what you love
- Improve your mood
- Have less difficulty with daily activities
- Feel more confident and in control

## Learn to balance your activity with rest

Give yourself time to get back to normal. Most of our patients tell us it takes about one to three months to feel fully recovered.

Use the tips below to save your energy and help your recovery.

### Prioritize

Decide what tasks you need to do yourself and what tasks you can ask someone else to do.

### Plan

Do the things that use up your energy when you are feeling your best. Make sure you build in rest or relaxation periods during the day.

### Pace

Break down hard jobs into smaller tasks and take regular breaks before you become tired.

### Position

If you sit to perform a task, you will use 25% less energy than standing. Avoid unnecessary bending or overhead reaching.

## Practical tips

- Organize your time so you take fewer trips up and down stairs.
- Double the recipe when you cook and freeze some for another day.
- Use lightweight pots and pans for cooking.
- Consider equipment such as a shower chair, reacher and long-handled shoe horn.
- Get extra rest the day before a celebration.
- Get extra rest during times of emotional stress or illness.
- Use a weekly schedule.

## Your walking program

Walking is one of the best exercises for improving your health after a TAVI procedure. Plan to walk every day. Have someone walk with you for the first couple of weeks. If your physiotherapist provided you with a specific walking program, stick with that program when you get home. If not, start the walking program explained below.

Begin with short periods at a slow pace. Do what you can. Speed and distance are not as important. What matters is the length of time you walk. Gradually increase the length of time when it feels good to do so.

If you can't walk for five minutes without stopping, try interval training.

- Walk for two to five minutes and then rest for two to five minutes.
- Repeat as many times as you are able.
- Gradually decrease the resting time between intervals.

Your goal is to work up to 20 to 30 minutes of walking every day.

## For those living with diabetes, glycemic control is important

It is typical to see higher blood glucose readings because you aren't as active. Please don't ignore them. Higher blood glucose readings (greater than seven millimoles per litre before meals) can increase your risk of infection and slow down the healing process.

Please call your diabetes team for help. If you don't have one, you should receive a call from the community diabetes program and the Diabetes Clinic at the Heart Institute for an appointment. Feel free to discuss your concerns with the advance practice nurse for diabetes at 613-696-7000 ext. 17111.

# EXERCISES

Below are some general tips about exercise.

- You should be able to carry on light conversation while exercising.
- Start with a few minutes of warm-up and end with a cool-down (for example, slower walking, seated or standing exercises).
- Walk on flat ground.
- Wait at least one hour after a meal before exercising.
- Exercise at a time of day when you feel rested, usually the morning rather than afternoon.
- Avoid extreme heat or cold. You might consider walking indoors in a mall, using a treadmill (no incline) or a stationary bicycle (little or no tension).
- Avoid heavy lifting or pushing.
- Avoid activities that involve using your arms above your head.
- Avoid exercises that make you strain, grunt or hold your breath.
- You should be back to your resting state within 10 minutes of completing your exercise. If not, reduce the time or intensity of exercise next time.
- Most patients do not need to be seen by a physiotherapist. However, if there are concerns, speak to your nurse and they can help arrange for a physiotherapist to see you in the hospital.

## **WHEN TO STOP AN ACTIVITY**

Always listen to your body. Stop the activity if you:

- Cannot carry on a conversation without being short of breath
- Feel weak or dizzy
- Feel sick to your stomach (nauseated)
- Feel your heart is pounding or racing
- Have any discomfort

***IF THESE SYMPTOMS PERSIST, CALL 9-1-1***

## SITTING EXERCISES

### Deep breathing

Place hands on stomach and take a deep breath.

Feel hands move out.

Exhale fully and feel hands move in.

Repeat \_\_\_\_\_ times.

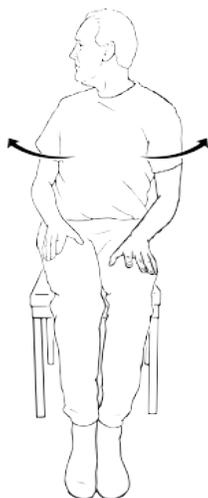


### Trunk rotations

With feet flat, turn upper body as far as possible toward one side.

Hold for three seconds. Return to starting position.

Repeat \_\_\_\_\_ times each side.

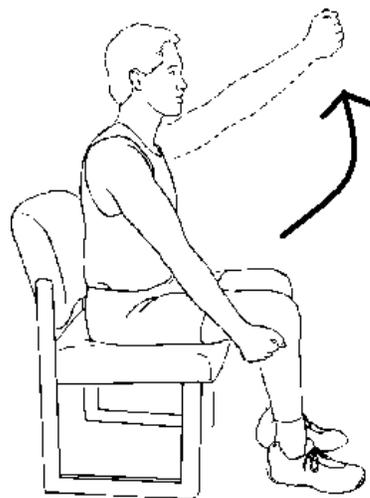


### Shoulder flexion

Lift one arm straight up and over your head as far as possible while you inhale.

Return arm to your side as you exhale.

Repeat \_\_\_\_\_ times each arm.



### Shoulder exercise

Bring both shoulders up as high as you can and then let them relax down.

Keep your chin tucked in.

Repeat \_\_\_\_\_ times.

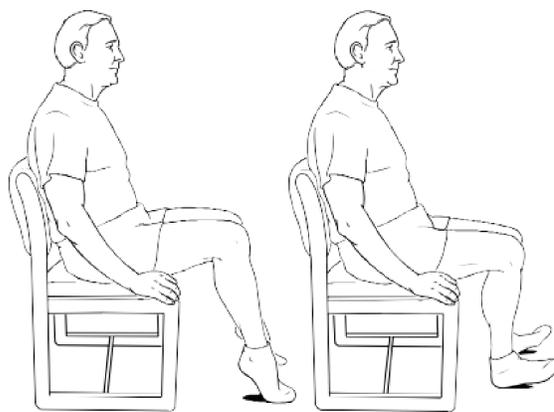


### Ankle pumps

Push down on your toes as you lift your heels off the floor as far as you can.

Then return your feet to starting position and lift your toes off the floor.

Repeat \_\_\_\_\_ times.



### **Knee raise**

Raise knee up towards your chest and then lower it to the starting position.

Repeat with other knee.

Keep alternating right and left.

Repeat \_\_\_\_\_ times.



### **Knee extension**

Sit with your back straight and hands in your lap or at your sides.

Slowly straighten one knee.

Hold for three seconds and then lower it to the starting position.

Repeat \_\_\_\_\_ times with each leg.



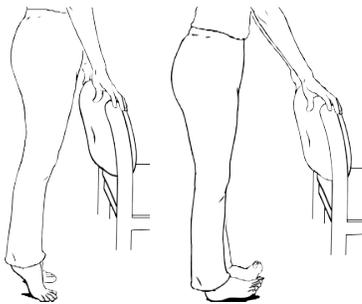
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## **STANDING EXERCISES**

### **Toe raises**

Gently rise up on toes, then roll back on heels.

Repeat \_\_\_\_\_ times.

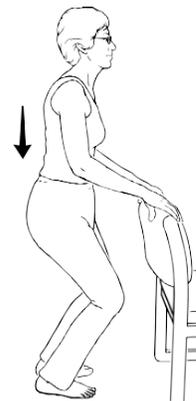


### **Mini squat**

Holding a chair for balance, slowly bend knees.

Keep both feet on the floor.

Repeat \_\_\_\_\_ times.



## Hip abduction

Holding a stable surface, move one leg straight out to your side.

Return to starting position.

Keep back straight and avoid leaning over when bringing your leg out.

Repeat \_\_\_\_\_ times with each leg.



## Hip/knee flexion

Holding stable surface, raise knee to hip level, and then lower knee.

Repeat \_\_\_\_\_ times with each leg.



## TIPS TO STAY ACTIVE

- Include a variety of activities you enjoy.
- Any amount of activity is better than none at all.
- Stick with it until it becomes a habit.
- Wear comfortable clothing and shoes.
- Invite a friend to join you for a walk.
- Schedule exercise into your day.
- Set reasonable goals for yourself.
- Keep an exercise journal to track your progress.

## CARDIAC REHABILITATION

We have a variety of programs to meet your individual needs. To get started, please call 613-696-7068, Monday to Friday, between 7 a.m. and 3 p.m., to schedule your Zoom, phone or in-person assessment. This appointment will occur approximately six weeks after your TAVI procedure.

There are many cardiac rehabilitation programs throughout our region working in partnership with the University of Ottawa Heart Institute. These programs will allow you to access the same cardiac rehabilitation services closer to your home. For more details about satellite tele-rehabilitation programs, please call 613-696-7068.



## Medications

When you are discharged from the Heart Institute, some of your medications may be changed or adjusted. If you are given a new prescription, make sure you take it to your pharmacy along with your old medications. Ask your pharmacist to review the changes.

Before you go home, it is important you and your family understand your prescription and how to take each medication. If you have any questions, make sure to ask.

If there are no other indications, most patients are given only lifelong Aspirin for their valve. If you had a recent cardiac stent put in, you may be on additional anti-platelet medication, such as clopidogrel (Plavix).

If you are already on an anticoagulant (for example, warfarin, apixaban, etc.), your doctor will decide what medication you should continue after your procedure.

NAME OF ANTI-PLATELET MEDICATION	HOW MEDICATION WORKS	POTENTIAL SIDE EFFECTS
ASA (Aspirin <sup>®</sup> , ECASA) Clopidogrel (Plavix <sup>®</sup> ) Prasugrel (Effient <sup>®</sup> ) Ticagrelor (Brilinta <sup>®</sup> )	<ul style="list-style-type: none"><li>• Helps prevent blood clots on transcatheter valves (clopidogrel, prasugrel).</li><li>• Decreases the risk of future heart attacks.</li></ul>	<ul style="list-style-type: none"><li>• Increased risk of bleeding and bruising.</li><li>• Upset stomach (nausea, diarrhea, heartburn).</li></ul>

## Travelling

We do not recommend long distance traveling for the first month after the procedure. For patients having had an uncomplicated transfemoral or subclavian TAVI procedure, do not drive for two weeks after the procedure.

If you have had an alternative access TAVI procedure or if you experienced rhythm complications after receiving your TAVI, you can not drive for four weeks after your procedure.

Your doctor will inform you of your driving restrictions before your discharge.

# LIVING WITH YOUR AORTIC VALVE IMPLANT

## Maintaining a heart-healthy low-salt diet

Salt is a mineral that is made of sodium and chloride. It is found in food, table salt, and sea salt.

We recommend a salt intake of 2,000 mg of sodium a day.

A diet high in sodium can cause fluid to build up, forcing your heart to work harder.

A low sodium diet will help your heart to work more efficiently and place less stress on your heart valve. It may even keep you out of the hospital.

The following tips can help you to lower salt intake and keep your diet heart-healthy.

### Read food labels

- Choose food with less than 200 mg of sodium in each serving or 8% of the daily value.

### Reduce salt in cooking and avoid adding salt at the table

- Replace salt with fresh or dried herbs, unsalted spices, lemon juice, and flavoured vinegars.
- Rinse canned vegetables before using them in cooking.
- Try Mrs. Dash™ or McCormick's No Added Salt™ seasoning blends.

### Prepare meals using fresh ingredients

- Use fresh or frozen food wherever possible.
- Aim for a variety of food from each food group every day.
- Use canola or olive oils instead of hydrogenated or trans fats.
- Don't forget about keeping fibre up with whole grains and unsalted nuts and seeds.

For more details about how to manage salt and fluid intake, ask for a copy of the Heart Failure Patient Guide or download it on our website: [ottawaheart.ca/heart-failure-patient-guide](http://ottawaheart.ca/heart-failure-patient-guide).

## EATING HEALTHY

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 one to two 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.

## Preventing complications from dental work

Bacteria in your mouth can enter your blood stream through your gums and infect your heart tissues and valves (endocarditis). You can lower this risk by following regular oral hygiene practices, including brushing and flossing your teeth and visiting your dentist regularly.

After you are discharged, be sure to tell your dentist that you have had valve surgery.

Important points to remember:

- **Do not have dental work done for at least six months after your surgery unless there is an urgent problem. For example, a toothache or an abscess.**
- You **must** take antibiotics before any dental cleaning or treatments now and for the rest of your life.
- Your dentist or family doctor should give you a prescription before your appointment.

## **Symptoms of endocarditis can develop within days or slowly over the course of weeks.**

Some symptoms of endocarditis can include:

- Fever, chills, sweating or night sweats
- Unexplained lack of energy and/or weakness
- Unexplained aching joints and muscles
- Weight loss for no known reason

**If you have any of these symptoms, you should be assessed by a healthcare professional as soon as possible.**

## **Preventing other infections**

Your skin is a barrier against infections. Pay careful attention to any breaks or cuts in the skin. Contact your doctor immediately if you develop:

- Abscess
- Cuts that become swollen or tender and drain pus
- Any other suspected infections, including urinary tract infections

What to avoid:

- New body piercings or tattoos
- Intravenous use

## **NOTIFY YOUR HEALTHCARE TEAM**

It is important that any healthcare professional involved in your care knows that you have had valve surgery. Notify any healthcare staff that you consult that you have had valve surgery. If you do not have a medical alert bracelet, you may ask your doctor and/or pharmacy if you should get one. You can add any other important medical information to it as well (for example, you may wish to add details about your allergies).

## **Follow-up appointments**

Follow-up appointments may occur one to three months after your discharge from the hospital. You will have an echocardiogram one month after your TAVI discharge. This is to check on how your valve is functioning.

We recommend making an appointment to see your primary care provider within two weeks of discharge.

**IF YOU HAVE ANY QUESTIONS, CALL THE STRUCTURAL HEART NURSE SPECIALIST**

Phone: 613-696-7000 ext. 18826

**IF YOU NEED HELP OUTSIDE OF NORMAL BUSINESS HOURS,  
CALL THE NURSING COORDINATOR**

Phone: 613-696-7000. Press 0 and ask for the nursing coordinator.

# APPENDIX 1: WHERE TO FIND MORE INFORMATION

## GENERAL INFORMATION

The University of Ottawa Heart Institute’s website can provide you with information concerning all aspects of heart disease. Please visit the website at [ottawaheart.ca](http://ottawaheart.ca).

## DIAGNOSTIC TESTS

TEST	BRIEF DESCRIPTION
Echocardiogram <a href="http://ottawaheart.ca/echocardiogram">ottawaheart.ca/echocardiogram</a>	<p>This test uses ultrasound (high-frequency sound waves) to look at your heart and how the different parts of your heart are working—for example, the chambers, or your valves.</p> <p>An echocardiogram is performed by placing a hand-held ultrasound wand on your chest. By positioning the wand, the sonographer can evaluate the functioning of your heart.</p>
Transesophageal echocardiogram (TEE) <a href="http://ottawaheart.ca/trans-echo">ottawaheart.ca/trans-echo</a>	<p>This is a specialized type of echocardiogram test. It uses a thin, flexible tube that is inserted down your throat through to your stomach.</p> <p>A TEE allows your doctor to get a great look at your heart without interference from your ribs and lungs.</p>
Cardiac catheterization <a href="http://ottawaheart.ca/angiogram">ottawaheart.ca/angiogram</a>	<p>Cardiac catheterization is a procedure used to detect and treat some types of heart problems. A thin, flexible tube called a catheter is inserted into an artery and/or vein located in the groin area (or the arm) and is guided to the heart. Cardiac catheterization is used to:</p> <ul style="list-style-type: none"><li>• Evaluate or confirm the presence of coronary artery disease, valve disease or disease of the aorta</li><li>• Determine the need for further treatment (such as an interventional procedure or coronary artery bypass graft surgery)</li></ul>

ECG (electrocardiogram) <a href="http://ottawaheart.ca/electrocardiogram">ottawaheart.ca/electrocardiogram</a>	An electrocardiogram (ECG) is a test that measures and records the electrical activity of your heart.
Chest X-ray <a href="http://ottawaheart.ca/x-ray">ottawaheart.ca/x-ray</a>	A chest X-ray lets doctors take pictures of the structures inside your chest, including your heart, lungs, blood vessels, and bones. X-ray pictures of the chest can show how large your heart is and whether there is too much fluid in your lungs (pulmonary edema) caused by heart failure.
CT scan <a href="http://ottawaheart.ca/ct-scan">ottawaheart.ca/ct-scan</a>	A computed tomography (CT) scan is a type of X-ray test that lets doctors take three-dimensional (3D) pictures of your heart and blood vessels. The CT scanner combines the specialized X-rays with a high-powered computer that reconstructs the information into 3D views.

## Additional resources

- [newheartvalve.com](http://newheartvalve.com)

# APPENDIX 2: TALKING TO YOUR DOCTOR

## Discuss risks and complications

Your cardiologist and cardiac surgeon will fully discuss the risks of this procedure with you and your family or caregiver.

When talking to your doctor, the following is a list of questions that may help you to decide whether this procedure is right for you.

How would this procedure benefit me?

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What are the risks of this procedure for me?

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How painful is the procedure?

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How long is the waiting list for this procedure?

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How long will this valve last?

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How will I receive follow-up care?

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Will long-term medication or medication changes be required after the procedure?

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# HEART INSTITUTE PATIENT ALUMNI

## WE CAN HELP. WE'VE BEEN THERE.

The Patient Alumni is a diverse community of current and former University of Ottawa Heart Institute patients, their families, friends and caregivers. We support the Heart Institute by sharing information about the prevention and treatment of heart disease, and by helping to fund projects and services to improve patient comfort and care.

By joining the Alumni, you will become part of a 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 45 years, the Heart Institute has delivered worldclass care to thousands of patients. Our goal is to stay in touch, stay informed, and contribute to the Heart Institute's quality of care and future success.

## WHY JOIN THE ALUMNI?

Joining is free, 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

For more information and access to free membership, visit our website, [ottawaheartalumni.ca](http://ottawaheartalumni.ca)

Or contact us at:

**Email:** [alumni@ottawaheart.ca](mailto:alumni@ottawaheart.ca)

**Phone:** 613-696-7241



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



**PATIENT ALUMNI**  
ASSOCIATION DES  
ANCIENS PATIENTS

