TAVI
Transcatheter Aortic Valve Implant

A GUIDE FOR PATIENTS AND FAMILIES
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: __________________________

TAVI Coordinator (Phone): 613-696-7000 x18826

IMPORTANT

Nursing coordinator: 613-696-7000.
Press 0 and ask for the nursing coordinator.
The nursing coordinator is available 24 hours a day if you have any 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 your “Discharge Prescription/Notes” letter.

   This form is completed by your doctor and has information about your TAVI procedure, your prescription medications, and your follow-up plans.

   The white copy of this form contains your new prescription which you must remove and give to your pharmacist on your way home. The rest of the white copy is yours to keep.

   Give the yellow copy to your family doctor within two weeks of your discharge.

☐ Reviewed your medications with your nurse.

☐ Discussed attending a Cardiac Rehabilitation program.

☐ Arranged your transportation home. You cannot drive for at least 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.
TABLE OF CONTENTS

Referral for Transcatheter Aortic Valve Implant ................................................................. 6
  About Aortic Stenosis ........................................................................................................... 6
  About TAVI .......................................................................................................................... 6
  Transcatheter ....................................................................................................................... 7
  Transcatheter Aortic Valves ................................................................................................ 7

The TAVI Team at the Heart Institute ................................................................................. 9
  The TAVI Committee ........................................................................................................... 9
  Deciding the Best Option .................................................................................................... 9

What are the Risks and Possible Complications of a TAVI Procedure? ......................... 10
  What Happens if a Life-Threatening Complication Occurs During My TAVI Procedure? ......................................................................................................................... 10

Preparing for Your TAVI Procedure .................................................................................. 11
  Dental Visit .......................................................................................................................... 11
  Waiting for a TAVI Procedure ............................................................................................. 11
  Pre-Admission Unit ............................................................................................................ 14
  Preparing for Your Stay at the Heart Institute ................................................................. 14

What to Expect During Your Stay ...................................................................................... 16
  Before Your Implant Procedure ....................................................................................... 16
  During the Implant Procedure ......................................................................................... 16
  For the Family/Contact Person ....................................................................................... 16

After the Implant Procedure ............................................................................................... 17
  In the Intensive Care Unit ................................................................................................ 17
  Recovering on the Nursing Ward ..................................................................................... 18

Going Home ......................................................................................................................... 19
  Managing at Home ............................................................................................................. 19
  What to Watch For ............................................................................................................. 19
  Physical Activity ................................................................................................................ 20
  Home Monitoring ............................................................................................................. 26
  Medications ........................................................................................................................ 26
  Travelling ........................................................................................................................... 26

Living with Your Aortic Valve Implant .............................................................................. 27
  Maintaining a Heart Healthy, Low-Salt Diet ................................................................. 27
  Preventing Complications from Dental Work ............................................................... 28
  Preventing Other Infections ............................................................................................ 29
  Follow-up Appointments ................................................................................................. 29

Appendix 1: Where to Find More Information ................................................................. 30

Appendix 2: Talking to Your Doctor .................................................................................. 32

Heart Institute Patient Alumni .......................................................................................... 33
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 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, blackouts as well.

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.

TRANS Catheter

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.

TRANS Catheter 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 natural 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. The catheter is then inserted and guided to the aortic valve opening in your heart where it is implanted over your existing valve.

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.

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<tr>
<th>CARDIOLOGISTS</th>
<th>CARDIAC SURGEONS</th>
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<tr>
<td>Dr. M. Labinaz</td>
<td>Dr. M. Ruel</td>
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<td>Dr. C. Glover</td>
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<td>Dr. A. Dick</td>
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<td>Dr. T. Al-Atassi</td>
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THE TAVI COORDINATOR

While you are waiting for your TAVI procedure, expect to be contacted by the TAVI Coordinator. The TAVI Coordinator 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 TAVI Nurse is your first contact point and is available by telephone to answer questions or assist as needed.

The TAVI Committee

Once all your appointments and tests are complete your doctor will discuss your particular situation at the TAVI Committee meeting. The TAVI Committee includes all the TAVI doctors along with doctors who specialize in reading X-rays and echocardiograms, the TAVI Advanced Practice Nurse, 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.

Deciding the Best Option

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 of the heart
- 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 very important you and your family 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), this needs to be completed before the procedure.

Waiting for a TAVI Procedure
The wait times for TAVI 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.

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 TAVI Coordinator for details.

BOOKING DATES AND CHANCE OF CANCELLATION
You will be notified of your booked procedure date a few weeks in advance. Final confirmation of your date will not occur until the week before.

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

Having your procedure cancelled is very 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 members. 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 TAVI Coordinator at any time during normal 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 normal 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 or is not relieved with nitro spray,
- 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 TAVI coordinator.

**Maintain Your Health**

Continue to be active every day even if only for short periods of time. Check with your doctor about what level of activity is best for you. Slow down if you become short of breath or feel faint.

**Eat a Healthy Diet**

Good nutrition before your TAVI is important and may help you to heal more quickly after your procedure. 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 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

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.
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 TAVI Advanced Practice Nurse. They may refer you to see the registered dietitian in Cardiac Rehab at the Heart Institute.

Below are some tips to help in the meantime.

- Eat smaller amounts of foods 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 such as 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 foods such as foods labeled “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 Convalescence After Your TAVI Procedure

The expected length of stay in the hospital after your TAVI procedure is one to four days. Most patients tell us it takes about a month to feel fully recovered. Your discharge plan must ensure help and support is available to start as soon as you are discharged.

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 TAVI Coordinator before you are admitted for your procedure.
Pre-Admission Unit

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

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 the final tests done to ensure you are ready and okay 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 and a half 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 friend who can help you by taking notes or asking questions.

Before your PAU appointment, the TAVI Advanced Practice Nurse 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 TAVI Advanced Practice Nurse, please call 613-696-7000 x18826.

Preparing for Your Stay at the Heart Institute

Expect to stay at the Heart Institute for about one to four days after your procedure.

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 physiotherapist and 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 9:00 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 catheterization laboratory, 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 catheterization laboratory.

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

If you are having local anesthesia, the doctor will use a type of anesthesia 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. With general anesthesia, once you are asleep, the doctor will put a breathing tube in your mouth. This tube is connected to a breathing machine. Usually the breathing tube is removed before you are fully awake.

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 Coronary Care Unit.

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 telephone.

If your family wants to speak to the doctor in person, we will refer them to the lobby volunteer desk where they can register with the volunteers and wait in the Family Lounge.

If you want the doctor to call a specific family member, 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

In the Intensive Care Unit

After your procedure, you will be transferred to the Coronary Care Unit (CCU). You will be carefully monitored for the first 24 hours after your TAVI procedure.

CORONARY CARE UNIT VISITING HOURS

Visits to the CCU are arranged through the volunteer desk on the main floor of the Heart Institute. There is a family lounge available on the main floor where you can wait while the volunteers arrange for you to visit your family members.

PROGRESS REPORTS

While you are in CCU, we recommend you appoint one family member to act as a contact person. Your contact person can call the CCU at 613-696-7000 x14751 to ask about your progress at any time.

WHILE YOU ARE IN THE CORONARY CARE UNIT

For the first four hours after your implant procedure, expect the nurse to be constantly reminding you to keep both legs straight. This is very important 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.
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 mobilizing, a physiotherapist will 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 be wearing a cardiac monitor for 48 hours.

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 bruise or 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, sometimes spreading quite a bit.

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

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, slightly swollen, and occasionally, to have some clear drainage.

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 disorientated.
Physical Activity

Do not lift, push or pull anything that weighs more than 10 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, the physiotherapist will provide you with a physical activity program which is designed to help you recover and get your energy back.

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, and
• 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 a month to feel fully recovered.

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

Prioritize

Decide what tasks you really 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 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 normal to see higher blood glucose readings because you aren’t as active. Please don’t ignore them. Higher blood glucose readings, greater than 4 – 7 mmol/l 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 (e.g., 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.

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.

**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.

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**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.

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**CARDIAC REHABILITATION**

These programs provide more specific exercise and lifestyle guidelines.

There is no cost for participation and options include on-site or home-based programs.

To get started, call 613-696-7068.
Daily Weight Checks

While you are recovering in the hospital, your weight will be checked daily. A sudden weight gain might be an early sign you are retaining extra fluid. When you go home, you will need to continue to weigh yourself every day for the first month to make sure you are not building up extra fluid.

Before you are discharged, you will be given a daily weight tracker form. There are spaces on this form for you to write down your weight every day. The nurse will review with you how to weigh yourself daily and when you need to call us.

Home Monitoring

If you need close follow-up after discharge, you may be referred to the Telehome Monitoring Program. If you are referred, the nurse from Telehome Monitoring will meet with you and show you how to use the special equipment before you go home.

Medications

When you are discharged from the Heart Institute, expect to have a new prescription written for all of your medications. Some of the medications will be the same as what you were taking before and some will be different.

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 you ask. You may have to take an anti-platelet medication. These medications make your blood less sticky and will help to prevent clots forming on your new valve.

<table>
<thead>
<tr>
<th>NAME OF ANTI-PLATELET MEDICATION</th>
<th>HOW MEDICATION WORKS</th>
<th>POTENTIAL SIDE EFFECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASA (Aspirin®, ECASA)</td>
<td>• Helps prevent blood clots on transcatheter valves (clopidogrel, prasugrel).</td>
<td>• Increased risk of bleeding &amp; bruising.</td>
</tr>
<tr>
<td>Clopidogrel (Plavix®)</td>
<td>• Decreases the risk of future heart attacks.</td>
<td>• Upset stomach (nausea, diarrhea, heartburn).</td>
</tr>
<tr>
<td>Prasugrel (Effient®)</td>
<td></td>
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<tr>
<td>Ticagrelor (Brilinta®)</td>
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</tbody>
</table>

Travelling

We do not recommend long distance traveling for the first month after the procedure. Do not drive for four weeks after the 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. Too much salt in your diet can cause fluid to build up, forcing your heart to work harder.

A low-salt 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 and keep your diet heart-healthy.

Read Food Labels
- Choose any food in which the sodium (salt) content is 8% or less per serving.

Reduce Salt in Cooking and Avoid Adding Salt at the Table
- Replace salt with fresh or dried herbs, unsalted spices, lemon juice, and flavored 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 foods 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, ask for a copy of the Heart Failure 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.

- Keep your teeth and gums as healthy and clean as possible by regular brushing and flossing.
- For the first six months after your implant procedure, do not have any dental work done, including a cleaning, unless you have a toothache or an abscess.
- After the first six months, make sure you see a dentist at least once a year.
- Tell your dentist you have had valve surgery.
- You will need to take antibiotics before any dental cleaning or treatments. Your dentist or family doctor will give you a prescription before your appointment.
Preventing Other Infections

Your skin is a barrier against infection. Protect your skin by avoiding any body piercing or tattooing. Pay careful attention to any breaks or cuts in your skin.

Contact your doctor immediately if you develop:

- a fever.
- an abscess or boil.
- a cut that has become swollen or tender or draining pus.
- any other suspected infections including urinary tract infections.

Notify your doctor if you experience increased shortness of breath or swelling of your ankles or feet.

MEDICALERT BRACELET

You will receive a MedicAlert application form when you are discharged. Please wear this bracelet to alert healthcare professionals that you have an artificial heart valve.

Follow-up Appointments

You will be given an appointment to see either your cardiologist or your cardiac surgeon about one month after your valve implant procedure. You will have another echocardiogram on the day of this appointment.

KEEP YOUR HEALTHCARE TEAM INFORMED

Inform any healthcare professional involved in your care that you have had a transcatheter valve implant procedure. This includes your family doctor, any other doctors you see, your pharmacist, physiotherapist, home nurse, or anyone else who helps you to keep healthy.

IF YOU HAVE ANY QUESTIONS, CALL THE TAVI ADVANCED PRACTICE NURSE

Phone: 613-696-7000 x18826

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 www.ottawaheart.ca.

DIAGNOSTIC TESTS

<table>
<thead>
<tr>
<th>TEST</th>
<th>BRIEF DESCRIPTION</th>
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</table>
| Echocardiogram                            | 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 different chambers, or your heart valves.  
An echocardiogram is performed by placing a handheld ultrasound wand on your chest. By positioning the wand, the sonographer can evaluate the functioning of your heart. |
| Transesophageal Echocardiogram (TEE)      | This is a specialized type of echocardiogram test. It uses a special thin, flexible tube that is inserted down through your throat through to your stomach.  
A TEE allows your doctor to get a very good look at your heart without interference from your ribs and lungs. |
| Cardiac catheterization                   | 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 guided to the heart. Cardiac catheterization is used to:  
- evaluate or confirm the presence of coronary artery disease, valve disease or disease of the aorta  
- determine the need for further treatment (such as an interventional procedure or coronary artery bypass graft (CABG) surgery) |
<table>
<thead>
<tr>
<th><strong>ECG (Electrocardiogram)</strong></th>
<th>An electrocardiogram (ECG) is a test that measures and records the electrical activity of your heart.</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="http://www.ottawaheart.ca/patients_family/electrocardiogram.htm">www.ottawaheart.ca/patients_family/electrocardiogram.htm</a></td>
<td></td>
</tr>
<tr>
<td><strong>Chest X-ray</strong></td>
<td>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.</td>
</tr>
<tr>
<td><a href="http://www.ottawaheart.ca/patients_family/chest-xray.htm">www.ottawaheart.ca/patients_family/chest-xray.htm</a></td>
<td></td>
</tr>
<tr>
<td><strong>CT scan</strong></td>
<td>A computed tomography (CT) scan is a type of X-ray test that lets doctors take three-dimensional (3-D) 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 3-D views.</td>
</tr>
<tr>
<td><a href="http://www.ottawaheart.ca/patients_family/computed-tomography-scan.htm">www.ottawaheart.ca/patients_family/computed-tomography-scan.htm</a></td>
<td></td>
</tr>
</tbody>
</table>

**HEART HEALTHY AND LOW SALT DIETS**

For more information about a low salt diet, check our website at: [www.ottawaheart.ca/heart-failure-patient-guide](http://www.ottawaheart.ca/heart-failure-patient-guide)
APPENDIX 2: TALKING TO YOUR DOCTOR

Risks and Complications

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

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?

What are the risks of this procedure for me?

How painful is the procedure?

How long is the waiting list for this procedure?

How long will this valve last?

How will I be followed up?

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