You are Having a Transcatheter Aortic Valve Implantation

Getting Ready for the Procedure
You recently had heart tests and meetings with the health care team to decide which option would be the best choice for treating the symptoms caused by your aortic stenosis.

The team recommended transcatheter aortic valve implantation (TAVI) as the best option for you. This means having your aortic valve replaced using this procedure.

You told us that you are ready, willing, and able to come for the procedure as soon as we give you a procedure date. You are now on the wait list for this procedure. The procedure may be done at either St. Paul's Hospital or Vancouver General Hospital.

To prepare yourself for the procedure, please read this booklet and share it with your family.

We have included information about:
- What to expect while you are on the wait list
- How to prepare for the procedure
- What to do once you know your procedure date
- What happens while in the hospital

We hope it helps to answer questions you may have. Use the page at the back of the booklet to keep track of important dates and write down any questions you may have.

With this booklet, we have included a card to carry in your wallet. Please carry the card with you at all times.

If you go to an emergency department for care, if you are admitted to hospital, or if you see a doctor who is not your regular doctor, please show them this card. The card tells them you are on the wait list for TAVI and that they must call the TAVI office if your medical condition changes.
How is the TAVI procedure going to be done?

‘Transcatheter’ means we use a catheter (a small flexible and hollow tube) to place a new aortic valve in the heart. We make a small opening in a large artery or through the front of the chest, and then thread the catheter and new valve into the right position. Unlike open heart surgery, there is no need to open the chest for this procedure.

The TAVI procedure is usually done one of two ways. Both approaches use small catheters to place the artificial valve in the correct position. As technology changes, we may use another approach.

We have checked off (✓) which approach the doctor will use.

☐ Transfemoral TAVI — A small opening is made in a large artery, usually in your groin (called the femoral artery). The doctor threads a catheter through your artery and up into your heart.  
Described in more detail on page 12.

☐ Transapical or alternate surgical approach TAVI — A small opening is made in your chest, between your ribs. The catheter is inserted through your chest wall and into your heart.  
Described in more detail on page 13.

☐ Another approach: ____________________________________________________________________  
____________________________________________________________________________________

Preparing for the Procedure

How long will you be on the waitlist?

It depends on many things. Your overall health as well as the size and shape of your heart valve are considered. It will be several weeks from the time of your TAVI Assessment appointment. When the TAVI nurse called you and you decided to be placed on the wait list, she told you approximately how long you would likely wait.

Who looks after your medical health while you are on the wait list?

You need to continue to have your health monitored and treated by your family doctor while waiting for your procedure.

You may have been referred to specialists for your heart condition or other medical conditions. You need to continue to see these doctors as well. Your regular doctor(s) continues to be responsible for your medical care while waiting for the TAVI procedure. Our TAVI doctors are responsible for your medical care when you come into the hospital for the TAVI procedure. After you go home, you will continue to see your regular doctor(s).
Preparing for the Procedure, continued

What if your health changes while on the wait list?

Over time, as your aortic valve stiffens, it gets harder for the heart to pump blood through the valve. It’s a bit like when a door doesn’t open wide any more, and you need to push harder to open it.

As the aortic valve opening gets narrower, you might feel more tired or more short of breath than you did a few months ago. It is normal to have small changes in your symptoms while waiting for TAVI procedure. If you experience a gradual worsening of your symptoms but your health does not change too much, your regular doctor will monitor and treat you while you wait for your procedure.

We do need to know about sudden changes in your health.

- If your health suddenly gets worse:
  - Follow your doctor’s instructions.
  - Ask a family member to call our office.

- If you are admitted to hospital:
  - Give the doctor or nurse your wallet card.
  - Ask the doctor or nurse to call our office.

Once we have been contacted, we make contact with your regular doctor and follow your progress. Depending on your situation, we will let you know if the changes in your health affect the date scheduled for your procedure.

If our doctors feel that the TAVI procedure is no longer the best option for you, we will recommend other options for care of your heart condition.

Preparing for the Procedure, continued

Getting yourself ready for the procedure

While you are waiting for the TAVI procedure, here are some guidelines for what you should do:

Keep active

Stay as active as you can. Ask your doctor about what level of activity is best for you. Exercise every day, even if only for short periods of time. Exercise is important for your heart and general health. Slow down if you get short of breath, have chest pain, or feel faint. Talk with your doctor about which activities are best for you.

Driving

For people with severe signs of aortic stenosis, we recommend that you do not drive until your valve is replaced. However, every person is different. Talk to your family doctor about whether or not it is safe for you to drive during this time.

Eat healthy

It’s important that you eat as well as possible to prepare for the procedure. If your doctor has restricted the amount of liquids and salt you should have, continue to follow your doctor’s recommendations.

Take your medicines

Continue to take the medicines that your doctor has prescribed.

See your dentist

If you have your own teeth and you have not seen your dentist in the last 6 months, book an appointment. If you need dental work done, arrange to have your dental work completed before your procedure date. Dental work done right after receiving a new heart valve could cause the new valve to become infected.
Preparing for the Procedure, continued

See other healthcare providers
The TAVI nurse or doctors may ask that you see other medical specialists while you are waiting for TAVI. For example, you might benefit from seeing a geriatrician (a doctor who specializes in the care of older adults), a physiotherapist (a therapist who helps people move as well as possible), a dietitian, or a psychiatrist.

Plan ahead
Going home plan: Plan ahead for when you return home before you come to the hospital for your procedure. Plan how you will get home. Plan for any help you may need once home. See the section on ‘Going Home’.

Advanced Care Planning: Plan now for the care you wish to receive should your health worsens. Think about your personal and financial affairs. Talk to your family about your future health care, in case you cannot speak for yourself later.

Consent for the TAVI procedure
The TAVI doctor sees you the morning of your procedure to review the benefits and risks of the procedure. At this time, we ask you to sign the consent form agreeing to have the procedure done.

However, use the time waiting for the procedure to write down your questions and concerns. Contact the TAVI office with your questions. It is better to answer all your questions now rather than the morning of your procedure.

When your procedure date is booked
Our goal is to let you know well before the date of your procedure. However, we may call you on short notice if there is a change to our wait list.

You should also remember that, sometimes, we need to cancel and postpone your procedure because of other surgeries or emergencies.

When we call to let you know the date for your procedure, write this date on the checklist at the end of this booklet.

How long will you be in hospital?
Most people stay in hospital for 1 to 4 days. Some patients may need more time to recover.

It is difficult to predict how long you will need. It depends on your general health, the results of the procedure, and the general plan for you going home. Most people recover faster if they do not stay in hospital longer than needed.

Our plan is for you to go home as soon as we feel it is safe for you to leave. If you need more time in a hospital to recover, we may transfer you to a hospital closer to your home or to another care facility.
Pre-assessment clinic visit

Everyone who has planned surgery and procedures such as a TAVI is seen in the clinic before their surgery. The Pre-Assessment Clinic in the same hospital where you are having the procedure will call you about your appointment.

During this clinic visit, you see a nurse and an anaesthesiologist (the doctor who gives you the medicine to sleep during the procedure). We take a health history *, get an update on your medications, check your blood pressure and heart rate, and listen to your chest. We give you instructions on how to prepare for the procedure and where to go. You may also have an x-ray of your chest, an electrocardiogram, some blood tests, and be asked for a urine sample.

• Please bring all of your medications (or a current list) with you to your appointment.
• If you live in the Greater Vancouver area, your appointment will be either the week before your procedure or a few weeks earlier.
• If you live further away, your appointment will likely be the day before your procedure. Plan to come to Vancouver a few days before your procedure date.

Tell us about any health problems we might not have asked about. We especially want to know if you have frequent bladder infections or if you have ever been told you have an enlarged prostate.

The day of your procedure

Do not eat anything (no solid food) after midnight (12:00 a.m.) the night before your procedure.

You may drink sips of water, clear juice, or tea without milk until 3 hours before your arrive at the hospital.

Take the medications you usually take in the morning with a small sip of water.

If you take insulin or pills for diabetes, aspirin, or blood thinners (such as warfarin or Coumadin), we will give you specific instructions during your Pre-Assessment Clinic visit.

Most people who have a TAVI procedure come to hospital the morning of the procedure. A few people are asked to come to the hospital the night before the procedure. We will let you know when to come in.

☐ If you are having your procedure at St. Paul’s Hospital:
  • go to the Surgical Day Care on the 3rd Floor of the Providence Building. (See the map at the end of this booklet)

☐ If you are having your procedure at Vancouver General Hospital:
  • go to the Ground Floor of the Jim Pattison South Pavilion.
  • report to Station 7 – Heart Services. (See the map at the end of this booklet)
What to bring to the hospital
Use the checklist at the end of this booklet to keep track of what to bring. Bring items you might need during your hospital stay, such as:

- Toothbrush
- Toothpaste
- Comb or brush
- Slippers (with non-slip soles)
- Glasses
- Hearing aid(s)
- Reading materials
- Your walking aid, such as a cane or walker

Bring only few personal items and clothing. It is best if your family can keep your clothes until the day you leave the hospital.

Do not bring a lot of cash or valuables.

You may be moved at least twice during your admission. We do not want to lose any of your belongings in these moves.

For valuable belongings that you need to keep with you, we suggest you obtain insurance. This is to insure against both loss and damage. Your insurance should include coverage for glasses, hearing aids, dentures, watches, as well as your own wheelchair or walker. Our insurance only covers items that we have damaged or lost.

If you wear glasses, hearing aids, or dentures, it is a good idea to have them labelled or engraved with your name.

Giving consent
Before the procedure, the TAVI doctor reviews both the benefits and risks of having the TAVI procedure. At this time, we ask you to read the consent form and sign that you agree to have the procedure.

Some people find it hard to read and take in the information contained in the form right before the procedure. Please feel free to ask us to read it to you.

The TAVI Procedure
What happens before the procedure?
While in the admission area, we check you in and ask you to change into a hospital gown. We suggest you give all your belongings to your family to hold onto until after the procedure.

Once ready, we move you to the Procedure Room area and prepare you for the procedure.

1. We start an intravenous (intra meaning ‘into’ and venous meaning ‘vein, commonly called an IV).

2. We attach you to a heart monitor.

3. The anaesthesiologist gives you an anaesthetic so you sleep or are very relaxed during the procedure.

   ‘General anaesthesia’ means we give you medicines that cause all your muscles to completely relax, including muscles used to breathe. Once you are asleep, the doctor puts a breathing tube down your throat and into your lungs to protect your lungs from any fluid accidentally getting into your lungs. It also allows the doctor to give you oxygen and help you breathe.

   ‘Local anaesthesia’ means we give you medicines that help you relax and feel sleepy. You are also given ‘freezing’ medicine (like at the dentist) so that you do not feel any pain or discomfort. With a local anaesthetic, you do not need a breathing tube into your lungs.

4. We may start a second intravenous. This one is placed in a large vein in your neck.

5. We may put a urinary catheter into your bladder to drain urine, if needed.
What happens during the procedure?
The whole TAVI procedure can take between 1.5 to 3 hours.

The actual insertion of the new heart valve usually only takes 30 to 45 minutes.

How the procedure is done depends on which approach you are having.

☐ If you are having a Transfemoral TAVI (usually through the groin)
  • A small opening is made in the femoral artery in your groin. ①
  • A catheter (a small flexible and hollow tube) is threaded through the artery and up into the heart. ②
  • The doctor uses a special x-ray machine to guide the catheter and new valve ③ into the right place.
  • We may insert a small wire and attach it to a pacemaker in case we need to control your heart rhythm while the valve is secured in place.
  • Once the valve is securely in place, the catheter and wire are removed.
  • A dressing is placed over the skin opening.

☐ If you are having a Transapical or alternate surgical approach TAVI (through the chest wall)
  • A small incision is made in the left side of your chest. ①
  • The catheter is inserted through the chest and into the heart. ②
  • The doctor uses a special x-ray machine to guide the catheter and new valve ③ into the right place.
  • We may insert a chest tube to collect any blood or fluid that might drain from around the heart after the procedure.
  • We may insert a small wire and attach it to a pacemaker in case we need to control your heart beat while the valve is secured in place.
  • We may leave the pacemaker wire in place in case your heart rhythm needs help to get back to normal after the procedure. We can use the wires to connect to energy to reset the heart rhythm, if needed. Once the heart rhythm returns to normal, we pull the wire out.
  • A dressing is placed over the skin opening.
What happens right after the procedure?
You are moved from the Procedure Room to a critical care unit.

For a Transfemoral TAVI, (usually through the groin)
• You will most likely be moved to the Cardiac Intensive Care Unit (CICU) or Coronary Care Unit (CCU) to recover for your first day.

For a Transapical or alternate surgical approach TAVI, (through the chest wall)
• You will most likely be moved the Cardiac Surgery Intensive Care Unit (CSICU) to recover for your first day.

For most people who receive a general anaesthesia:

The breathing tube is removed in the procedure room, shortly after you move into the critical care area, or as soon as it is safe to remove it. Usually, we remove the tube fairly soon after the procedure.

If you wake up with the tube in place, do not worry. We tell you what to do and how to communicate with us.

If you are someone who suffers from claustrophobia and worry about waking up with the breathing tube in place, please let us know at your Pre-Assessment Clinic visit. We will make sure you are given medication to relax and not feel worried should you wake up with the breathing tube in place.

During the first 24 hours of recovery
Here is what you can expect.

Equipment
• You will be attached to a heart monitor.
• You will have an intravenous in your neck and maybe another one in your arm.
• Some patients may need a urinary catheter in place to drain urine for their bladder.
• Our goal is to remove this equipment as soon as possible, often the same day as your procedure or early the next morning. If you have a chest tube, we usually take it out the day after your procedure.

Positioning
If you have the transfemoral (usually through the groin area) TAVI, you lie flat for the first 4 hours and we remind you to keep both your legs straight. This is to make sure that you don’t start to bleed through the small opening we made in your groin. The nurse will check your groin area frequently.

If you have the transapical or alternate surgical approach (through the chest wall) TAVI, you can have your head raised up slightly.

Activity
At first, we keep you lying in bed. We will help you turn from side to side often. We begin to increase your activity as soon as it is safe. Increasing your activity is important to your recovery. Our goal is to get you sitting in bed, then in a chair, and then walking the day after your procedure.

Nutrition
Once the effects of your anaesthesia are gone and you feel well enough, you can start drinking clear fluids, and progress to eating.
**Pain and discomfort**

We give you medication to help relieve your pain.

- If you had a transfemoral (usually through the groin area) TAVI, you may have pain in the groin area. Sometimes, people get a bruise and it can get quite large. The bruise will slowly go away. Most people do not feel a lot of pain after this procedure.
- If you had a transapical or alternate surgical approach (through the chest wall) TAVI, you may have pain in the chest area. Let us know if you feel pain. We give you medication to ease the pain so you can move around comfortably.

To help us manage your pain, we will ask you to rate your pain using a number scale.

We will ask you “On a scale from zero to ten, where zero means no pain at all and ten means the worst pain ever, how much pain are you having right now?” We use the same scale all the time so we can compare your pain over time. We will ask you often to rate the amount of pain you are having using this numbered pain scale.

Your pain should not be more than 2 out of 10 at any time. If it is more than a 2, we will give you pain medication. Do not worry about taking too much pain medication. It is best to take as much as you need to keep your pain under control. As you recover, you will not need as much pain medication.

**Visitors**

Because patients in the critical care may be very sick, we limit the number of visitors for each patient to only 2 at a time.

We ask your visitors to check in with your nurse each time they wish to visit. They may need to wait for a little while before they can come in to visit.

We do not have any specified visiting hours. However, we prefer that you not visit or call the Unit during the time the nurses change shift.

**Moving from critical care**

We want to help you recover safely and as quickly as you are able. We will only keep you in the critical care area as long as you need to be there.

As soon as we feel it is safe for you to leave critical care, we move you to the heart unit (called the cardiac unit). If you are well enough to go home, you may leave the hospital directly from critical care.

At St. Paul’s Hospital, you may be moved to the nursing unit 5A or 5B, on the 5th Floor of the Providence Building.

At Vancouver General Hospital, you may be moved to the nursing unit CP10, on the 10th Floor of the Centennial Pavilion.

**Recovering on the cardiac unit**

This is a big step in your recovery. You will notice that your nurse cares several patients instead of just one (compared to critical care). This is because patients on the cardiac unit are all recovering and getting ready to leave the hospital.

A nurse practitioner (NP) may be part of your care team. A nurse practitioner is a specialized nurse who can provide the medical care you need in the recovery phase.

The nurse practitioner:
- Can prescribe medications, order tests, and follow your progress.
- Has ongoing contact with your surgeon who also visits you during your recovery.
- Helps coordinate your care while in hospital.
- Helps deal with any concerns around going home.

**Sleeping in the hospital**

Some people do not sleep well in hospital. Let us know if you have certain sleeping habits that work for you, or if you take a sleeping pill at home.
Equipment
To help keep close watch on your heart, we may leave you on a heart monitor for the first few days or until you leave the hospital.

Dressing care
Your nurse will change and remove your dressing as necessary.

Activity
We will get you to gradually increase your level of activity. It is very important you try to be as active as possible to prepare for when you leave the hospital.

Nutrition
Your appetite will probably be smaller than usual for a few days. It is important to drink enough liquids and eat enough food to help you recover as soon as possible. Talk to your nurse about any concerns or special needs you have.

Visitors
General visiting hours in the hospital are between noon and 8:00 p.m. If your visitors would like to visit earlier or later than these times, please be considerate of other patients in your room and speak quietly.

Length of stay
It is difficult to predict how long you will stay on the cardiac unit.
- People who have a transfemoral (through the groin area) TAVI are usually ready to leave the hospital about 1 to 4 days after their procedure. Some patients go home the day after their procedure.
- People who have a transapical (through the chest wall) TAVI usually need more time because it takes longer for the wound in the chest to heal. They are usually ready to leave the hospital about 5 to 7 days after their procedure.
- If your recovery is slower, we may arrange for you be moved to a hospital closer to your home.

Tests
Before you leave the hospital, you will have a chest x-ray and another echocardiogram (the ultrasound test of your heart) to check the valve position. You may also have some more blood tests.

Plan now for going home
Start planning for your return home the moment you know you will be having a TAVI procedure. This planning is one of the most important things you and your family can do to help us make your procedure a success.

Before you come to the hospital, you and your family will work with your health care team to coordinate your return home, making sure you are prepared to go home.

Key points to plan for

Getting home - You must make your own arrangements for your trip home. This includes road transport, flights, and accommodation payment. Even if you were brought to hospital by ambulance or air ambulance, you must arrange your return home. Ambulance services cannot be used to return people to their homes. We suggest you arrange to have someone travel with you for the trip home.

Help at home - You will need help when you first go home. It is hard to predict how much help you will need, and for how long. It is best to plan ahead so that you are sure to have the help you need at home. Most people who have TAVI say it takes them 1 to 2 months to fully recover.
We suggest you arrange to have someone stay with you for the first week or longer to help you recover.
If you are from outside of the Vancouver area, we suggest you stay one night close to the hospital before your trip home.
If you do not have family or friends to help you, you may qualify for home care services. If support at home is a concern for you, ask to see our social worker for more information before you come to the hospital.
Medications - Most people who have TAVI return to taking their regular heart medications once they leave hospital. We may also give you a prescription for a medication called clopidogrel (Plavix®). Clopidogrel helps prevent clots on your new valve and makes your blood less ‘sticky’.

Before you leave, we give you detailed information on how to care for yourself when you return home.

Questions I have
_____________________________________________________________________
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_____________________________________________________________________

The information in this document is intended solely for the person to whom it was given by the health care team.
I am having a Transcatheter Aortic Valve Implantation

My Pre-Assessment Clinic visit date: ____________________________________________

Location:  □ St. Paul’s Hospital – 3rd Floor, Burrard Building
   □ Vancouver General Hospital – Main Floor (Level 1),
   Jim Pattison South Pavilion, across from the Gift Shop

My regular doctor: ___________________________________________________________

My TAVI doctor: ____________________________________________________________

My procedure date: __________________________________________________________

Hospital:  □ St. Paul’s Hospital
   Surgical Day Care, 3rd Floor, Providence Building
   □ Vancouver General Hospital
   Station 7- Heart Services, Ground Level, Jim Pattison South Pavilion

Time to be at the hospital: ___________________________________________________

I am having a □ Transfemoral Transcatheter Aortic Valve Implantation (TAVI)
   □ Transapical or alternate surgical approach Transcatheter Aortic Valve Implantation (TAVI)

Bring to the hospital:
□ Clothes, shoes and a coat to wear home.    □ Toothbrush
□ Comb or brush                               □ Toothpaste
□ Slippers (with non-slip soles)             □ Glasses
□ Hearing aid(s)                             □ Reading materials
□ ________________________________________   □ ______________________________

My family contact person is: _________________________________________________

Phone (cell phone if possible): ______________________________________________