

You are having a Transcatheter Aortic Valve Implantation

Getting Ready for the Procedure



The Prince Charles Hospital
Transcatheter Heart Valve Program Office
07 3139 5825



Transcatheter aortic valve implantation (TAVI)

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.

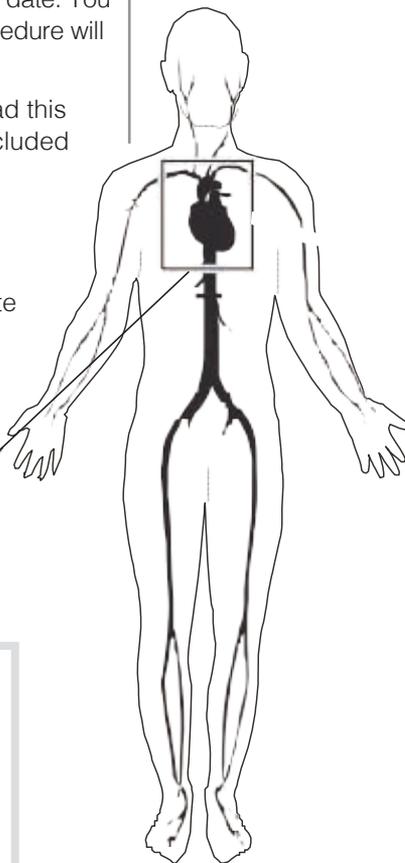
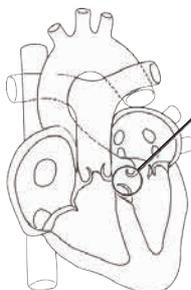
The team recommended transcatheter aortic valve implantation (TAVI) as the best option for you. This means having your aortic valve replaced using this procedure.

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 will be done at The Prince Charles Hospital, Brisbane.

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.



Useful contact information:

The Prince Charles
Hospital TAVI Office:
07 3139 5825

IMPORTANT: If you go to an emergency department for care or if you are admitted to hospital, it is important that you inform 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?



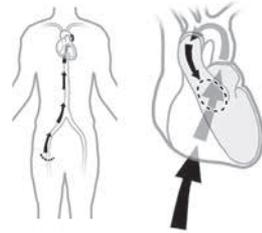
'Transcatheter' means we use a catheter (a small flexible and hollow tube) to place a new aortic valve in the heart. We make a small opening in a large artery or through the front of the chest, and then thread the catheter and new valve into the right position. Unlike open heart surgery, there is no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

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

Trans Femoral 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.

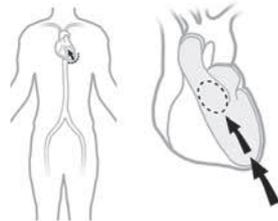
Described in more detail on page 12.



Trans Aortic or Trans Apical TAVI

A small opening is made in your chest or between your ribs. The catheter is inserted through your chest wall or ribs and into your heart.

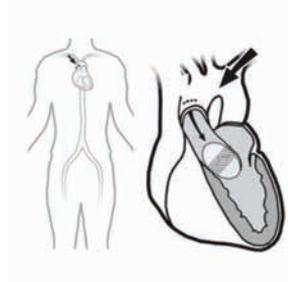
Described in more detail on page 13.



Subclavian TAVI

A small opening is made underneath your collar bone. The catheter is then inserted into the subclavian artery into your heart.

Described in more detail on page 12.



Two examples of artificial valves



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 Assessments.

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 GP 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) with the addition of scheduled appointments, to check the valve function, at The Prince Charles Hospital.

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. 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 the 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.

If your health suddenly gets worse:

Follow your GP's instructions.
Ask a family member to call our office on **07 3139 5825**.

If you are admitted to hospital:

Ask the doctor or nurse to call our office. The Prince Charles Hospital TAVI Office on **07 3139 5825**.



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

Once we have been contacted, we will contact 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.

IMPORTANT: 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.



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 GP 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 GP 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 GP about whether or not it is safe for you to drive during this time.

Eat healthy

It's important that you eat well 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 medication

Continue to take the medication 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.

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 worsen. 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

When you are admitted for the TAVI procedure, you will be reviewed by the doctor and the Research team to review the risks and benefits 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 waiting until you are admitted for the 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?

The average hospital stay depends on the TAVI approach.

For Trans Femoral cases approximately 4 days and for Trans Aortic /Apical & SubClavian cases 7 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. If you need more time in hospital to recover, we may transfer you to a hospital closer to your home or to another care facility.

Pre-assessment clinic visit or admission

Everyone who has a planned procedure is seen in the Pre-Assessment Clinic

before their procedure. During this clinic visit, you see a nurse, a doctor and a pharmacist.

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 (ECG), 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 take insulin or pills for diabetes, aspirin, or blood thinners (such as warfarin or rivaroxaban), we will give you specific instructions during your Pre-Assessment Clinic visit. You will then be admitted to the hospital the day prior to your procedure.
- If you live further away, you will most likely be admitted to the hospital instead of attending the pre-assessment clinic

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.

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 4 wheel walker

Bring only a 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 money 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.
- If you wear glasses, hearing aids, or dentures, it is a good idea to have them labeled or engraved with your name.



The TAVI procedure

What happens before the procedure?

Once you are admitted to the ward, you are checked in by the doctors and nurses. We take a health history, get an update on your medications, check your blood pressure, heart rate and listen to your chest. You will also have an x-ray of your chest, an electrocardiogram (ECG), some blood tests and be asked for a urine sample and any tests that may need to be repeated prior to the procedure

General preparation is attended to by the nurses. The access area is shaved for trans femoral both groins, for the transaortic/apical, the chest area. You will be measured for TED stockings to prevent blood clots.

There will be specific questions that the research nurse will discuss with you before and after the procedure, this information is collected and used to assess the effectiveness of the TAVI procedure, so that over time TAVI valves will be approved by the TGA (Therapeutic Goods Authority).

The procedure is re-discussed, along with the risks and benefits, by the doctors and research nurses prior to obtaining procedural consent for the TAVI.

The anaesthetist will visit you to check you over and discuss with you the type of anaesthetic that you will have 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.

Depending on your general medical condition and certain medications that you may already take, we may need to manage some of these in a different

way prior to your procedure. This includes insulin or pills for diabetes, or blood thinners such as Warfarin or Rivaroxaban.

We may place an intravenous cannulae into one of the veins in your arm in preparation for any fluid requirements prior to the procedure, while you are fasting. For the ladies we put a urinary catheter into your bladder to drain urine, usually the evening prior to the procedure.

What happens the day of the procedure?

You will be asked to change into a hospital gown, after your shower. We will place a protective skin dressing onto the sacral (tail bone) area, to protect your skin while you are lying still during the procedure. TED stockings will be applied and for the gentleman a Uridome to drain urine from your bladder.

Once ready, you are moved to the Procedure Room area.

- We start an intravenous infusion (drip), if not already started the evening prior
- We attach you to a heart monitor.
- The anaesthetist gives you an anaesthetic so you sleep or are very relaxed during the procedure.
- We may start a second intravenous infusion (drip). This one is placed in a large vein in your neck.



What happens during the procedure

The whole TAVI procedure can take between 90 minutes 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.

Trans femoral TAVI

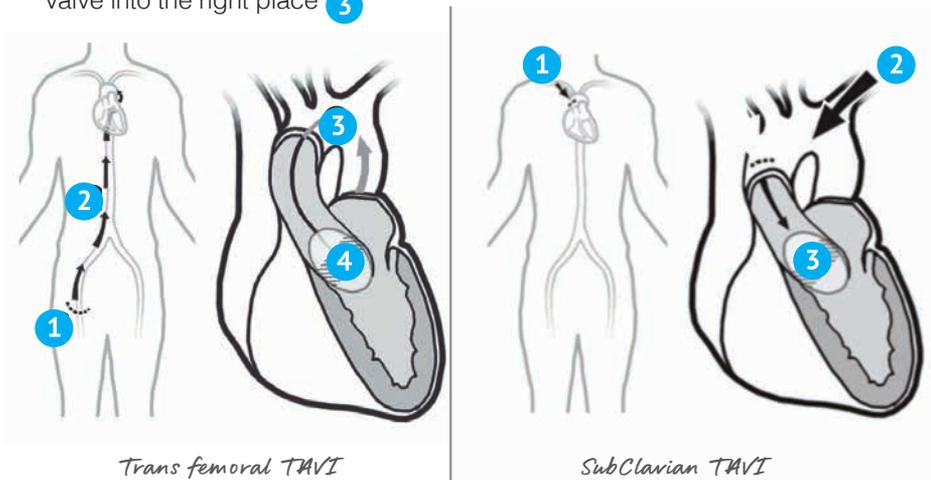
If you are having a Trans femoral TAVI (usually through the groin) then:

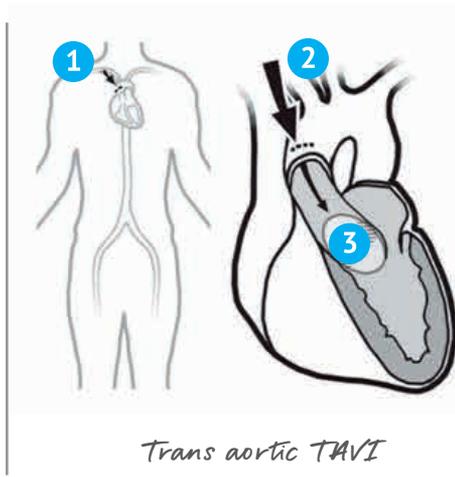
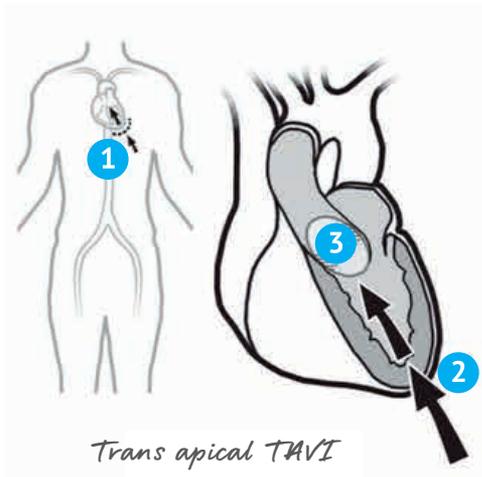
- A small opening is made in the femoral artery in your groin **1**
- A catheter (a small flexible and hollow tube) is threaded through the artery and up into the heart **2**
- The doctor uses a special x-ray machine to guide the catheter **3** and new valve into the right place **4**
- We may insert 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.

Sub Clavian TAVI

If you are having a Sub Clavian TAVI (usually under the collar bone) then:

- A small opening is made in your subclavian artery under your collar bone **1**
- A catheter is threaded through the artery and into the heart **2**
- The doctor uses a special x-ray machine to guide the catheter and new valve into the right place **3**





Trans aortic/apical TAVI

If you are having a Trans aortic/apical TAVI (through the chest wall/through the ribs)

- A small incision is made in the left side of your chest or through your sternum (chest bone). **1**
- The catheter is inserted through the chest/sternum 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 Trans femoral TAVI, (through the groin)

- You will be moved to the Coronary Care Unit (CCU) to recover for your first day.

For a Sub Clavian TAVI (small opening under the collar bone)

- You will be moved to the Coronary Care Unit (CCU) to recover for your first day.

For a Trans aortic/apical TAVI, (through the chest wall/through the ribs)

- You will be moved the Intensive Care Unit (ICU) to recover for your first day.

For most people who receive a general anaesthetic:

- 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

Equipment

- You will be attached to a heart monitor.
- You will have an intravenous drip in your neck and maybe another one in your arm.
- Some patients may need a urinary catheter in place to drain urine from 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 trans femoral (through the groin) 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 trans aortic/apical (through the chest wall) TAVI, you can have your head raised up slightly.

If you have the sub clavian (through a small opening under the collar bone) 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 for 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 anaesthetic 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 trans femoral (through the groin) 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 trans aortic/apical/ SubClavian (through the chest wall/through the ribs/under the collar bone) TAVI, you may have pain in the chest/ribs 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 CCU/ICU areas may be very sick, we limit the number of visitors for each patient to only 2 at a time (immediate family only). **Visiting times are generally: 10am to 1pm and 3pm to 8pm.** 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.

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 CCU/ ICU area as long as you need to be there.

As soon as we feel it is safe for you to leave CCU/ICU, we move you to one of the cardiac wards. If you are well enough to go home, you may leave the hospital directly from CCU.

Recovering on the cardiac ward

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

Cardiac ward visitors

Visiting times on the cardiac wards are more flexible, with visiting generally from 10am through to 8pm.

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.

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

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 start at 10am. 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 trans femoral (through the groin area) TAVI are usually ready to leave the hospital about 4 days after their procedure.
- People who have a trans aortic/apical (through the chest wall/through the ribs) 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 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, making sure you are prepared to go home. 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 leave, we give you detailed information on how to care for yourself when you return 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. You may be eligible for the Patient Travel Subsidy Scheme (PTSS) and if flights are needed the Ward Clerk will assist in organising this prior to discharge. 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 Brisbane 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

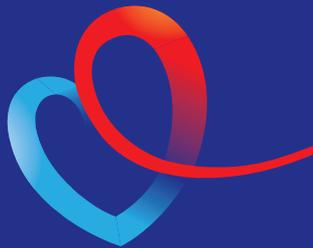
Most people who have a TAVI return to taking their regular heart medications once they leave hospital. We may also give you a prescription for a medication called Clopidogrel (Plavix®). Clopidogrel helps prevent clots on your new valve and makes your blood less 'sticky'.

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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