

# TriClip™ Procedure for Tricuspid Valve Regurgitation

## A guide for your procedure

You and your family can use this guide to prepare for your TriClip procedure at Toronto General Hospital, and for your recovery when you leave the hospital.

Read this guide for more information:

- About your heart ..... page 2
- About the TriClip procedure ..... page 5
- When to get medical help..... page 16
- Healthy living with a new TriClip..... page 17

When you come to the hospital for your appointments, please bring:

- ✓ This booklet
- ✓ Your medications in their pharmacy containers
- ✓ Your Health Card (OHIP)

**TriClip Program Office  
Toronto General Hospital**

200 Elizabeth Street – Eaton South (Room 223)

Toronto ON M5G 2C4

Email: [Triage.TAVI-MitraClip@uhn.ca](mailto:Triage.TAVI-MitraClip@uhn.ca)

Phone: 416 340 4800 extension 6153 or 6803 | Fax: 416 340 5143



Patient Education



**UHN**

Toronto General  
Toronto Western  
Princess Margaret  
Toronto Rehab  
Michener Institute

**Someone from the TriClip office will call you 48 hours before your appointment to notify you when to arrive for your procedure.**

Our goal is to let you know the date of your procedure well ahead of time. However, we may call you on short notice if:

- there is a cancellation and we may be able to do your procedure sooner
- there is an emergency and we need to postpone or reschedule your procedure

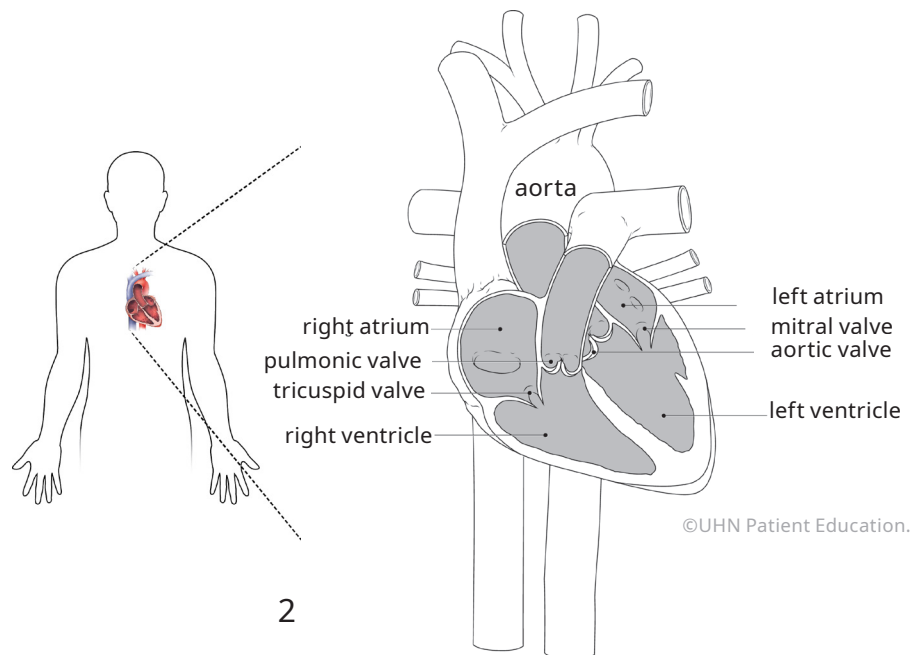
## About Your Heart

Your heart is like an amazing machine. From the moment you are conceived, to your very last breath, your heart never stops pumping blood throughout your body. Like any machine, the heart also wears down with age. In some cases, important parts of your heart can stop working as well as they used to and need to be repaired or replaced.

Your heart has 4 chambers. There are 2 on the upper part of your heart are called the right atrium and the left atrium. The 2 on the bottom part of your heart are called the right ventricle and the left ventricle.

You also have 4 heart valves between those chambers. They open and close allowing blood to pass through one way with each heartbeat. The tricuspid valve is one of the heart valves.

### The parts of the heart

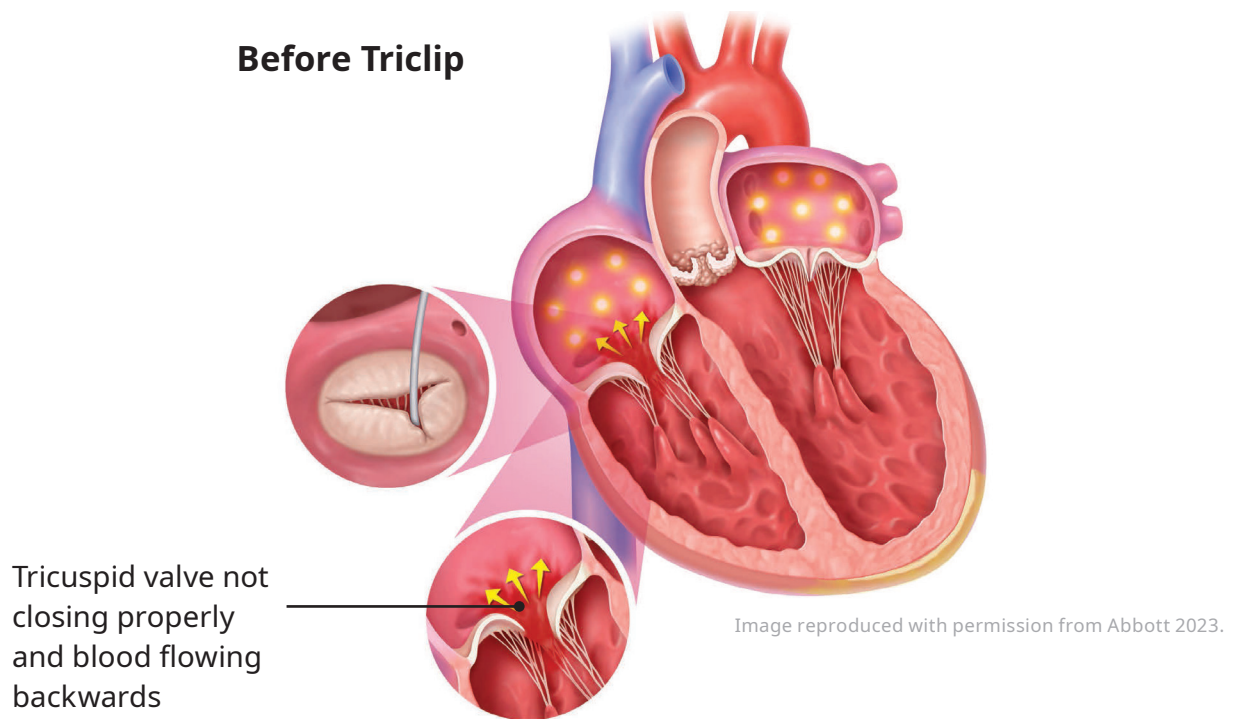


## Tricuspid Regurgitation

Your blood flows through your heart in a forward direction. When the heart valves open, blood flows through. When they close, blood should not move backwards.

With tricuspid regurgitation, sometimes referred to as TR, the tricuspid valve does not close completely. This allows some blood to move backwards. In other words, blood “regurgitates” into the right atrium when the right ventricle contracts.

Your cardiologist can talk with you about whether you need to be treated with medication or if a TriClip is best for you.



Inside a heart with Tricuspid Regurgitation

## How do I know if I have tricuspid regurgitation?

Tricuspid regurgitation causes the heart to pump harder. Over time, your heart can become larger and will not work as well. Tricuspid regurgitation often does not cause signs or symptoms until the condition is serious.

People with serious tricuspid regurgitation may experience these symptoms:

- shortness of breath
- fatigue (feeling very tired) and less able to do exercise over time
- swelling in lower legs, feet and abdomen (belly)
- lightheadedness

Severe symptoms can include heart failure and even death.

## **Why do I have tricuspid regurgitation?**

Tricuspid regurgitation may develop for one of these reasons:

- a congenital disorder which causes an abnormality of the tricuspid valve
- right ventricle enlargement (lower right chamber of the heart)
- left sided valve disease (aortic or mitral)
- damage to the valve from an infection

## **What does tricuspid regurgitation mean for me?**

Having tricuspid regurgitation does not necessarily mean you will have any symptoms. However, tricuspid regurgitation may get worse over time, leading to health problems that may affect your quality of life.

When an abnormal tricuspid valve gets narrow or leaks, your heart works harder to pump blood. Like other muscles in your body, if your heart is forced to push or move heavy loads, it may grow and thicken.

As the valve grows and thickens, you will begin to experience more severe symptoms. Most patients are referred to a TriClip doctor when their tricuspid regurgitation is moderate to severe.

# The TriClip

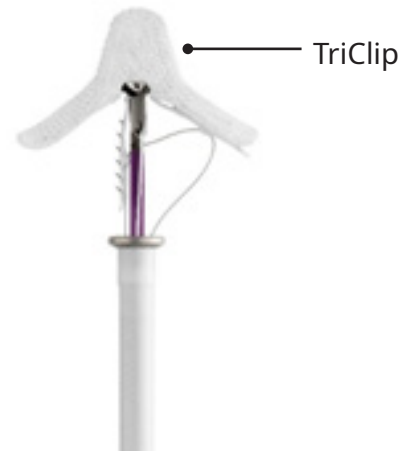
---

## What is a TriClip procedure: Trans-catheter Tricuspid Valve Repair?

**TriClip procedure** is the name of the minimally invasive procedure that your surgeon or cardiologist may recommend to repair your heart valve.

**This repair is called a TriClip procedure.**

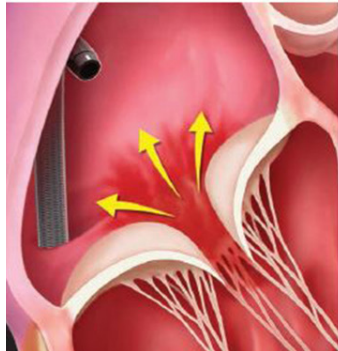
The surgeon places the TriClip on 2 or more of your tricuspid valve leaflets. The TriClip decreases the tricuspid regurgitation while allowing blood to flow on each side of the clip. Patients will have one or more clips inserted depending on how much repair is need for the tricuspid valve.



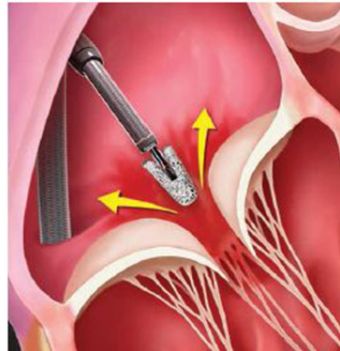
Medical word	What it means
Trans-Catheter	The clip is inserted through a thin flexible tube called a catheter.
Tricuspid Valve	The tricuspid valve controls the flow of blood through the right side of the heart. It has 3 or more leaflets that open to lead blood out of the right atrium into the right ventricle and close to prevent blood from flowing backwards.
Repair	To fix

## How is a TriClip done?

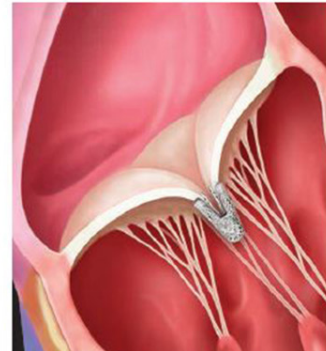
Main steps in a TriClip procedure:



1. The tube is guided into the right atrium of the heart



2. TriClip being inserted into the tricuspid valve leaflet



3. The TriClip is released and the tube is removed

Images reproduced with permission from Abbott 2023.

Your clinical coordinator can give you more information the TriClip procedure.

## What happens when my doctor refers me to Toronto General Hospital for a TriClip procedure?

- When the TriClip office receives your referral from your family doctor or cardiologist, a doctor from the TTRV team reviews it to decide what next steps are needed. The clinical nurse coordinator calls you to review the process and sends you some information to review.
- Our TriClip team includes cardiologists, cardiac surgeons, echo sonographers, anesthesiologists, nursing care coordinators and administrators who are here to help you and answer your questions.
- To help decide if you are eligible for a TriClip procedure, you need to do a few tests and meet with at least one of the doctors who will review your health history and the TriClip procedure with you.

## What tests will I need?

The process may be a little different for each patient but you can expect to have all of these tests done.

- **Transthoracic Echocardiogram (TTE):**  
An ultrasound of your heart which shows us how your heart and heart valves are working.
- **Angiogram:**  
An imaging procedure that shows us your heart's blood vessels, aorta and femoral arteries. The doctors may decide this can be done at the time of your TriClip procedure.
- **Transesophageal Echocardiogram (TEE):**  
A special type of ultrasound that uses sound waves to take pictures of your heart. The pictures are taken from inside the esophagus. This gives the team a clearer picture of the inside of your heart and your tricuspid valve.

## What clinic appointments will I need?

- You need to speak with at least 1 member of the TriClip team (by phone or in person). You may have a clinic appointment booked with a cardiologist, a cardiac surgeon, a nurse practitioner or all three.
  - All of these appointments are booked after the clinical nurse coordinator speaks with you, reviews the process and collects your health information.
  - We send all of your upcoming appointment information (times and dates) to an email address you provide or by mail.
  - The time from referral to procedure varies depending on your health and what dates are available. We will keep you updated on your progress every step of the way.

## **What can I do while waiting for procedure?**

There are a few things you can do to while you are waiting for your TriClip procedure:

### **Look more about the process.**

- Review the education booklet once you receive it.
- Write down questions and email or call our office to review with one of the clinical nurse coordinators.
- If you have someone who will be supporting you during this process make sure they also have this information and our phone number to ask any questions.

### **Keep healthy with ongoing medical care:**

- Your family doctor or primary health care providers are responsible for your medical care while you are waiting for the procedure.
- Continue to see them for your regular medical care.
- Continue to see specialists for your heart and other medical conditions.

## **What happens when my tests are done?**

- Once all of the testing and clinic visits are done we will review your case with the TriClip team.
- The team determines if a TriClip procedure is right for you by looking at your test results and reviewing your health history.
- A TriClip clinical nurse coordinator will call you to discuss the next steps (this may include open heart surgery, medical management or an appointment for the TriClip procedure).



## What can I expect when I am booked for my TriClip procedure?

### Before you come in for your procedure:

1. The TriClip clinical nurse coordinator will book your procedure. We review what you need to know before surgery during this booking, including:
  - When to stop taking any blood thinner medicine. It is very important that you stop taking your blood thinners to prevent you from bleeding too much during your procedure.
  - If you take certain types of blood thinners, you need to be seen at the Thrombosis Clinic before your procedure. An appointment will be set up for you. A clinician will explain when to stop taking your blood thinner.
2. You will speak with an anesthesiologist, pharmacist and nurse as part of your **Pre-Admission Clinic Assessment** to get you ready for your procedure. This may be done in person or over the phone.
3. You need to do tests at the hospital before your procedure as part of your **Pre-Admission Clinic Visit**.
  - At this appointment, you may have a Covid test, blood test, an ECG, a swab for MRSA or VRE and sometimes a chest x-ray.
4. Someone from the TriClip office will call you up to 48 hours before your procedure to tell you what time to arrive the day of your procedure.
5. You must start planning for your return home before your admission to the hospital. You will need to make arrangements for help at home after the procedure.
  - Please arrange for an adult, such as a relative or friend to:
    - pick you up from the hospital and drive you home or to your next place of residence
    - stay with you for a few days until you are comfortable doing your normal activities (or you stay with them)

If you have no one to help and you would like to see a Social Worker during your Pre-Admission visit, please call 416 340 4800 ext. 6153.

**Please let us know if you have any questions, if we missed anything during our discussions or if your health has changed.**

**Someone from the TriClip office will call you 48 hours before your appointment to notify you when to arrive for your procedure.**

## **What can I expect the day of my TriClip procedure?**

### **Before your procedure**

- Come to the **Cath Lab waiting room** (instructions will be provided to you when your TriClip procedure is booked).
- Once you check in you are given a gown to change into and a labeled bag for your belongings. **Please do not bring any valuables to the hospital with you.**
- You meet a few members of the surgical team, including the anesthesiologist, the nurse and the TriClip doctor to sign your surgical consent for your procedure.
- You have an IV line and an arterial line inserted into your arm.
- Once the team is ready you are brought to the catheterization lab to have your procedure.

## During your procedure

- You are asleep and under a general anesthetic during your TriClip procedure.
  - An anesthesiologist stays with you at all times and monitors you throughout the procedure.
- The surgeon makes a small puncture (opening) into your groin.
  - A catheter is inserted into your groin that carries the new TriClip through your femoral vein into your heart.
- The doctor uses x-ray imaging called fluoroscopy and a transesophageal echocardiogram to help see your heart and guide the catheter.

**Your tricuspid valve repair begins to work right away to have the blood flow in the correct direction. By repairing your tricuspid valve, we hope to relieve your symptoms by helping your heart work better and improve the quality and length of your life.**

## After your procedure

- You are transferred to the cath lab recovery room to be monitored after your procedure. Some patients leave the hospital from the recovery room on the day of the TriClip procedure. Other patients stay in recovery for about 1 to 2 hours. Then they move to the cardiac floor where they stay overnight and leave the hospital the next day.
- The team will speak to the contact you provided to let them know that the procedure is over and how you are doing.
- When you are ready the team transfers you to the cardiac floor. Most patients leave the hospital the next day.
- Your care team assesses your condition and talks with you and your family about how you are recovering. Together you decide when you are able to leave the hospital. This is called discharge planning.

## **What care do I need after my TriClip procedure?**

After the TriClip procedure, you may be transferred to one of 2 cardiac floors (5B or 4A – both in the Peter Munk Building of the hospital).

- The nurse checks you regularly to make sure you are comfortable. Let the nurse know if you are having pain.
- The nurse regularly checks your groins and your arms, teaches you what to expect as they heal, and how to care for these sites.
- The nurse reminds you to keep your legs straight the first 4 hours after the procedure. This is very important to prevent bleeding from the insertion sites in your groin. Also, there may be some intravenous tubes or temporary wires in your groin.
- After that first 4 hours, the nurse helps you gradually increase your activity, from sitting up in bed to sitting in a chair to walking short distances.
- When you are fully awake, we give you clear fluids to drink. You can start eating food when you are drinking well.

Tell the nurse or doctor if you notice:

- the incision becomes red and tender
- the incision becomes more painful
- the incision starts to leak or drain yellowish fluid
- you feel unwell or think you may have a fever

## **Can I have visitors?**

Family or friends who want to call after your procedure can phone the Toronto General Hospital at 416 340 4800 and press 0. They need to give your name and will be transferred to the cardiac floor where you are staying.

They can speak with the charge nurse for more information about visiting hours.

## What activities can I do?

- You will have help to gradually increase your activity. Each day you will be able to do a little more activity and walk farther.
- As your appetite improves, you can have a regular diet. We will provide heart-healthy meals to help you recover.

## What tests might I expect to have done before I go home?

- Chest x-ray
- ECG (electrocardiogram) – a record of your heart’s electrical activity
- Blood tests
- Echocardiogram – ultrasound images of your heart

## What can I expect for my recovery?

Check your insertion site every day. If you notice any of these warning signs, see your family doctor.

What is normal?	What are warning signs?
<ul style="list-style-type: none"><li>• slightly red, swollen and tender</li><li>• a bit lumpy or bumpy</li><li>• occasional clear fluid</li><li>• pain gets better gradually</li><li>• bruising</li></ul>	<ul style="list-style-type: none"><li>• any area of redness or swelling that does not get better</li><li>• a lump that is getting bigger</li><li>• yellow or pink fluid</li><li>• pain does not get better or is severe</li><li>• fever – a temperature of 38.5 °C (101 °F) or higher</li><li>• bleeding from the puncture site that does not stop</li></ul>

**If you are worried, call your family doctor first or call the TriClip office at 416 340 4800 extension 6153 or 6803.**

## Do I need new medication after a TriClip?

There may be some changes to your medications after your TriClip. The cardiologist caring for you on the floor will include this in the list of your discharge instructions.

## What activities are safe?

- Before the procedure, your physical activity may have been very limited. After your procedure you can expect to feel tired and take rests often. As you get stronger and more confident, you can gradually increase your activity.
- Walking and or moving your body is important for your recovery. During the first week at home try walking around your space or taking a short walk outside each day. Then gradually increase your activity by walking a little longer each day.
- Until your follow-up appointment, please take it easy. **Do not lift or carry anything heavy such as a bag of groceries.** Avoid strenuous activities such as gardening, vacuuming and swimming.
- When you can return to work will depend on the type of job you do and your recovery. Please discuss your plans to return to work with your cardiologist or at your follow-up appointment.

We will give you written discharge instructions specifically for you before you leave the hospital. Your instructions will include all of the things you should do and not do when you go home or to your next place of residence. Please make sure you read and understand the discharge instructions before you leave the hospital.

Your discharge instructions will include information about:

- What to expect after your procedure
- Signs to watch for
- When you can shower or bathe again
- Caring for your puncture site
- Managing your medication
- When you can travel or fly in an airplane again
- Meal planning and nutrition
- Recommended exercise and physical activity
- What activity is safe
- When you can drive again
- Smoking and oral health
- Important contact numbers

## **Should my health care providers know that I have had a TriClip?**

Yes, tell all your care providers that you had a TriClip procedure. This includes:

- Your family doctor and any other doctor you see
- Your pharmacist
- Your physiotherapist, visiting nurses and home care providers

You may also wish to wear medical identification to let health care providers know that you have an artificial heart valve. You can order Medic Alert products (such as bracelets, necklaces or watches) from Medic Alert Foundation Canada at 1 800 668 1507 or [www.medicalert.ca](http://www.medicalert.ca).

## When do I need follow-up appointments?

You should have a follow-up appointment with your regular cardiologist 2 months after your TriClip. You may also need an echocardiogram as part of this follow up.

## When to get medical help

---

Once you leave the hospital, your regular doctors will provide your health care.

### Call your family doctor if you have any of the following:

- A lump that is getting bigger or increasing pain at your insertion site
- Fever – a temperature of 38.5 °C (101.3 °F) or higher
- Signs of skin infection – any area that has swelling, redness, warmth or yellow or pink fluid
- Signs of a bladder infection, such as burning, sudden urge to pee, urine that is cloudy or smells bad, back pain
- You feel ill and are concerned

### Call 911 or go to your nearest Emergency Department if you have ANY of the following:



- Sudden chest pain
- Sudden shortness of breath
- Irregular heart rate
- Loss of vision
- Numbness or weakness in your legs more than usual



## Healthy living with a TriClip

---

### How do I keep my heart healthy?

To stay healthy it is important to prevent germs such as bacteria from entering your body. Bacteria can get into your blood if you have an infection or wound in another part of your body.

For example, if you have an infection in your mouth or on your skin, bacteria can easily get into your blood. The bacteria can cause a serious infection that damages your heart tissue and valves.

### Healthy eating

For more information about healthy eating:

- Read UHN's pamphlet "Your Heart and Sodium (salt) Restriction"  
Visit [www.uhnpatienteducation.ca](http://www.uhnpatienteducation.ca)
- Visit the Dietitians of Canada website: [www.eatrightontario.ca](http://www.eatrightontario.ca)
  - Enter 'salt' in the search box for a list of helpful articles
- Speak with a Registered Dietitian for free at 1 877 510 5102

### Healthy skin

One of the best ways for you and your family to stay healthy is to wash your hands often. But keep your skin clean and dry. Check for any breaks or cuts in your skin.

**Remember, we are here to help! Please speak with the clinical nurse coordinator if you have any questions about this process.**



### Have feedback about this document?

Please fill out our survey. Use this link: [surveymonkey.com/r/uhn-pe](https://surveymonkey.com/r/uhn-pe)

Visit [www.uhnpatienteducation.ca](http://www.uhnpatienteducation.ca) for more health information. Contact [pfep@uhn.ca](mailto:pfep@uhn.ca) to request this brochure in a different format, such as large print or electronic formats.

© 2023 University Health Network. All rights reserved. Use this material for your information only. It does not replace advice from your doctor or other health care professional. Do not use this information for diagnosis or treatment. Ask your health care provider for advice about a specific medical condition. You may print 1 copy of this brochure for non-commercial and personal use only.