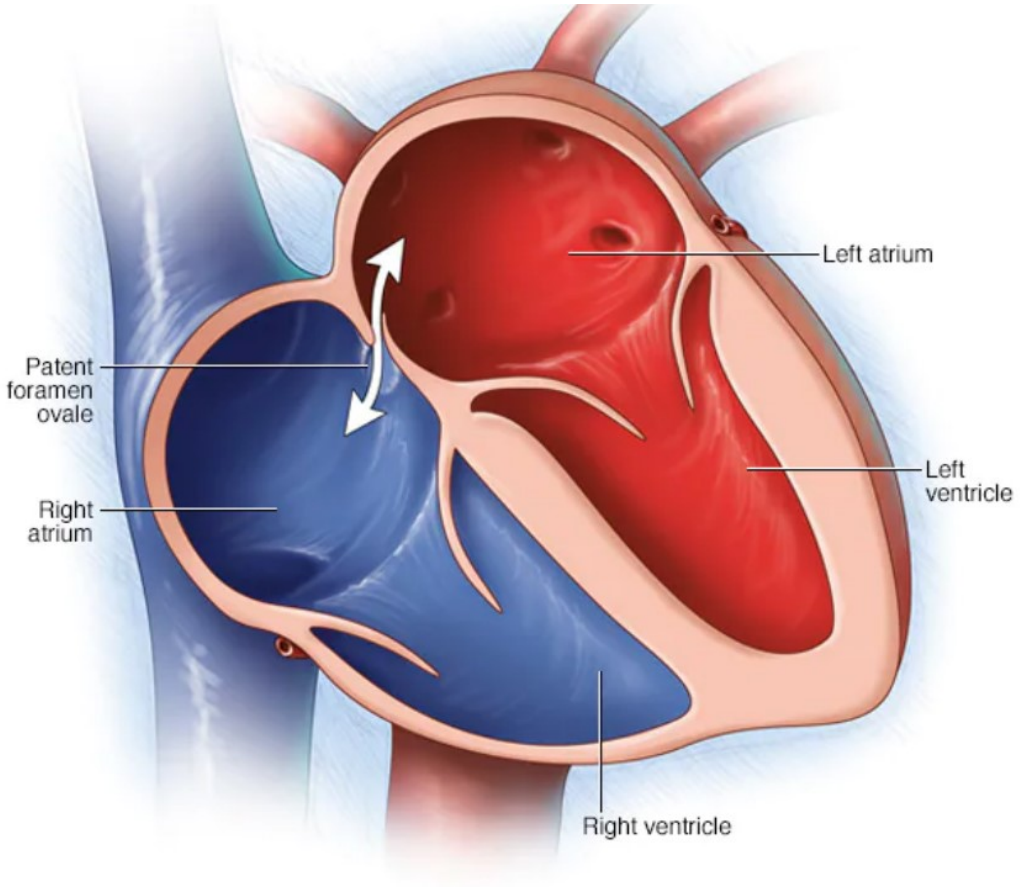


Patent Foramen Ovale (PFO) Closure

Information and Procedure Guide

Saskatchewan Health Authority

CS-PIER-0099-REG
MARCH 2024
Area: Regina

The Heart and Heart Valves

The heart has 4 chambers and 4 valves. The upper chambers are called atria and the bottom chambers are called ventricles. These chambers are separated from each other by heart walls. The chambers are connected by valves that act as one-way gates. When the chambers squeeze and relax, the valves allow blood to move forward in one direction throughout the heart.

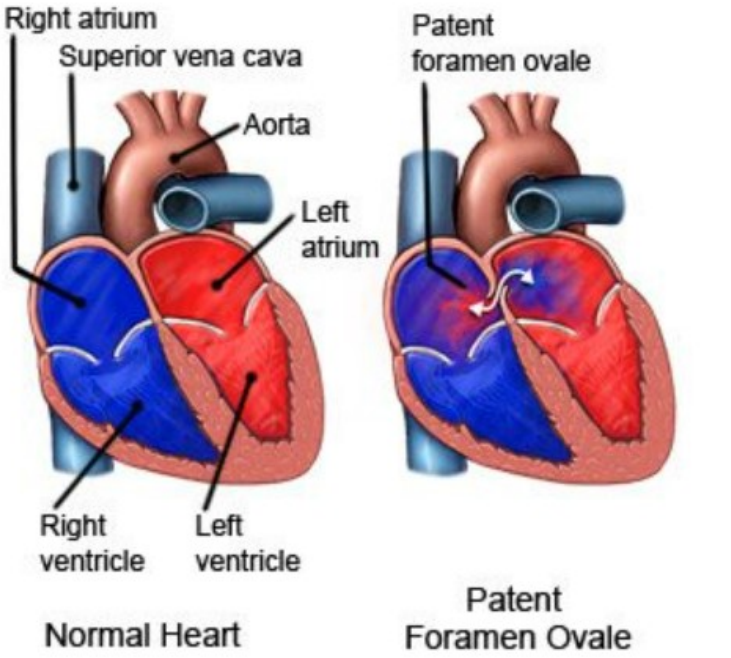
The right side of the heart receives used blood from the body and pumps it to the lungs to be oxygenated. The left side of the heart receives oxygen rich blood from the lungs and pumps it out to the body/brain.

What is a Patent Foramen Ovale?

The foramen ovale is a small flap or opening between the top two chambers of the heart (atria). Before we are born, we do not use our lungs to get oxygen rich blood. Instead this blood comes from the placenta via the umbilical cord. The foramen ovale allows blood to bypass lung circulation, moving oxygen rich blood from the right to left side of the heart.

In most people, this opening closes shortly after birth. A patent foramen ovale occurs when the opening, or flap, between the two heart chambers remains open. If a PFO is present, small amounts of blood can flow between the atria and increase the risk of a blood clot traveling from the right side of the heart into the left side. When this happens, a clot can travel to the brain and cut off blood supply, resulting in an ischemic stroke.

PFOs are common, affecting 1 in 4 people. Not every PFO needs to be closed and in most cases a PFO will not cause any problems or symptoms.



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Symptoms:

Most people will not have any signs or symptoms.

It is very common for a person to not know they have a PFO until they have cardiac tests done for another reason, or have an ischemic event, such as a stroke or TIA (transient ischemic attack).

Diagnosis and Testing

TTE (trans thoracic echocardiogram): Heart ultrasound over the chest to visualize the heart structures and function

TEE (Transesophageal Echocardiogram): Heart ultrasound through the esophagus (down your throat) to get a detailed look at the size, location and severity of blood flow across the upper chambers of the heart. This test is performed in hospital. A nurse will place and IV and give sedatives to make you drowsy and comfortable.

If you have a PFO and low blood oxygen levels, or an unexplained stroke, you may be referred to a structural heart cardiologist to determine if a PFO closure would be beneficial.

These tests help your PFO cardiologist determine if PFO closure is for you. Your results are then reviewed by the Structural Heart Team.

Treating a Patent Foramen Ovale

Treatment can prevent future strokes in individuals that have been diagnosed with a PFO and have experienced an unexplained stroke or 'mini stroke' (TIA).

Medications: Blood thinners may be prescribed to prevent blood clots from forming and causing a stroke. Medications will not close the flap in the heart, but will reduce the risk of having another stroke. These medications need to be taken long term and increase a persons risks of bleeding.

Open Heart Surgery: A surgeon uses small incisions and robotic tools to stitch the PFO closed.

Minimally invasive (transcatheter) closure: Usually, closure is done by placing a permanent device into your heart through a large vein in your upper leg (groin). Percutaneous closure is typically the preferred treatment as recovery time is minimal and long term blood thinners are not required.

If you are approved for the PFO closure procedure, you are placed on the waitlist. A percutaneous PFO closure is considered non emergent and may take several months before a procedure date is booked.

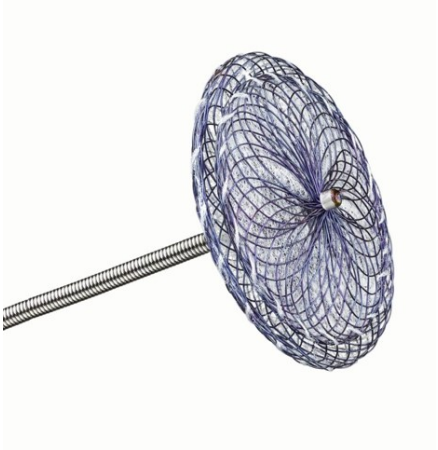
PFO Closure Procedure—What to Expect

Before Procedure

- You are given 1 to 2 weeks notice of your upcoming procedure date via phone. You are mailed instructions about how to prepare, and given a date for a pre-assessment clinic appointment.
- **Pre-assessment clinic (PAC) appointment**: Booked within a week of your procedure date. Procedure details are reviewed with you, required paperwork is completed for your hospital admission, bloodwork is obtained and a chest x-ray done . You are given a time to arrive at the hospital on your procedure date.
- No solid food after midnight, but you can continue to drink clear fluids like apple juice or water until 2 to 3 hours before your procedure.
- You are notified if there are any medications you need to stop taking before the procedure.

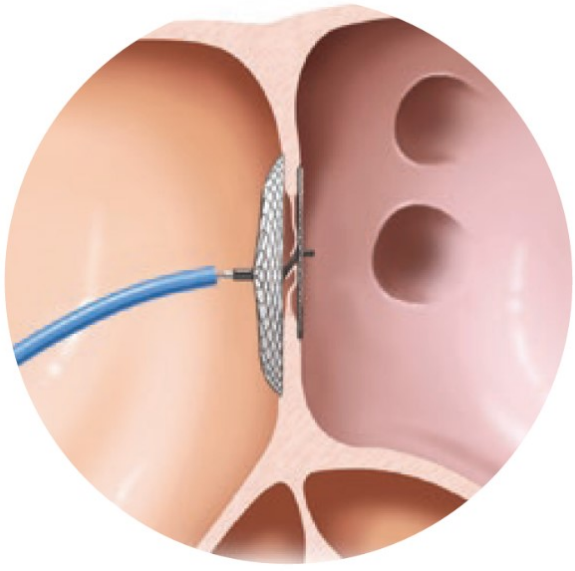
Morning of Procedure

- Take your medications as directed before arriving to the hospital.
- Do not stop in admitting— use the map given to you during your PAC appointment and go directly to PCI unit (3rd floor– RGH).
- Bring all your medications in their original containers. Bring any medical devices you will need (i.e. CPAP, cane, etc.). You will be spending the night in hospital. Do not bring any valuables.
- Bring this booklet.
- The nurses take your vital signs, do an assessment and insert an intravenous line.



In Procedure

- You are taken to the cardiac catheterization laboratory.
- Medical staff provide medications to help you relax (conscious sedation). You will be sleepy but able to follow commands. The procedure takes 1.5 to 2 hours.



After the Procedure

- After the procedure, you will be transferred back to PCI.
- After your recovery in PCI, You are transferred to the CSU (Cardiac Surveillance Unit– 3rd floor RGH) to recover overnight.
- You are monitored closely for 4 to 6 hours and are on bedrest. When your bedrest is over, a registered nurse helps you sit at the edge of the bed. You are encouraged to start mobilizing slowly with the assistance of the nurses, and then by yourself. Most patients can walk short distances (i.e. to the washroom and back) that same night.
- The next morning, a chest x-ray and transthoracic ECHO are done to reassess the function and position of your new PFO closure device. Registered nurses and your doctor review your lab work, ECG, chest x-ray, ECHO, and examine your groin incisions to make sure there are no concerns.

Going Home

- Most patients go home the day after the procedure. You are able to resume gentle activities, like walking, before you go home.
- On the day of discharge, have someone stay with you, or close by/ on call in case you need assistance or have bleeding from your puncture site.
- Gently increase your activity over the next 1 to 2 weeks. It is important not to push, pull, or lift anything over 5 kilograms (10 pounds) for the first 7 days to let the small incisions in your groin heal.
- You are told what medications to continue after the procedure. Generally, patients go home on all their previous medications, with the addition of low dose acetylsalicylic acid (ASA) (example: EC ASA 81mg; Aspirin®). ASA helps to prevent blood clots from forming on the device is to be taken lifelong. Patients are seen by their cardiologist in 2 to 3 months.

****Follow up appointments, testing and medications is directed by your cardiologist on discharge from hospital.**

Endocarditis Prevention: Endocarditis happens when bacteria (germs) gets into your blood, travels to you heart and causes an infection. You need to take antibiotics with any dental work that results in gum manipulation and bleeding such as routine cleanings, root canals, etc. For 6 months after your PFO procedure, a single dose of antibiotic 30 minutes prior to the procedure is needed. Your family doctor or dentist can prescribe this antibiotic, when needed.

Post Procedural Care

Personal Care:

- Remove the bandage on your groin 24 hours after your procedure. The site may be left uncovered or a new bandage may be applied for comfort.
- Do not soak in a bathtub, hot tub or swim for 7 days following the procedure.
- You may shower as usual 24 hours after the procedure. Cleanse the site gently with mild soap and water. Do not scrub. Pat dry. Keeping the site dry will improve healing.
- It is normal to have a small lump, bruise, or tenderness at the puncture site. Sometimes the bruise will get bigger before it starts to go away. Bruising, lumps and tenderness should gradually improve over the next 2 to 4 weeks

Notify your healthcare provider if you notice any of the following:

- Redness, swelling, drainage (pus) or warmth at the incision site.
- Increased in pain around the puncture site.
- The lump at your puncture/incision site is growing in size, is firm, or is pulsating under your skin.
- You develop a chill and have a fever of greater than 38.5°C.

Go to Emergency Department or call 911 if you have:

- Persistent or significant bleeding from puncture site.
- Severe pain, numbness, loss of colour, and/or significant swelling in limb of puncture site.
- Chest pain or sudden shortness of breath.
- Symptoms of a stroke:
    - One sided arm or leg weakness or facial drooping.
    - Slurred speech, difficulty speaking or understanding speech.
    - Changes in vision in one or both eyes.

If your puncture/incision site begins to bleed follow these steps:

- Lie down on a firm surface.
- Apply pressure yourself, or have someone help you. Press firmly with 2 to 3 fingers above the bleeding site for 15 minutes straight.
- If it continues to bleed, **call 911,** or have someone drive you to the closest **Emergency Department**. Do not drive yourself.

Post Procedural Care—Continued

Driving and Travelling

- Do not drive for 48 hours after your procedure.
- If you are travelling a long distance, stop, get out of the car and walk around every 1 to 2 hours .
- If you drive a commercial vehicle, speak to your doctor about driving.
- If you are travelling by airplane, most people are able to fly on the second day after the procedure.
- If you are travelling out of the county, speak to your doctor. You may not be covered by travel insurance immediately after the procedure. Contact your insurance company for their policy.

Returning to work

- If you do office work, where you are sitting most of the time, you can return to work 48 to 72 hours (2 to 3 days) after your procedure.
- If your work involves heavy lifting (more than 5 kilograms or 10 pounds), you can return to work after 7 days.
- If you have concerns about going back to work, speak to your family doctor.

PFO Closure Device Implant Card

After your procedure you receive your temporary procedure card . A permanent card is sent to you in the next several months. This card holds information about your device and should be shared with your healthcare providers including your dentist. It is important to share that you had a procedure before any invasive medical or dental procedures, including MRI's.

Appointments after PFO Closure

- See your family doctor or nurse practitioner 10 to 14 days after your procedure. You, or your family, need to make this appointment.
- Follow up clinic appointments with your **Structural Heart Physician** is determined by your physician after the procedure. You are notified of these appointments by mail or phone call.

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CS-PIER-0100-REG

Healthy People, Healthy Saskatchewan

The Saskatchewan Health Authority works in the spirit of truth and reconciliation, acknowledging Saskatchewan as the traditional territory of First Nations and Métis People.

PIER—Patient Information and Education Resource

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