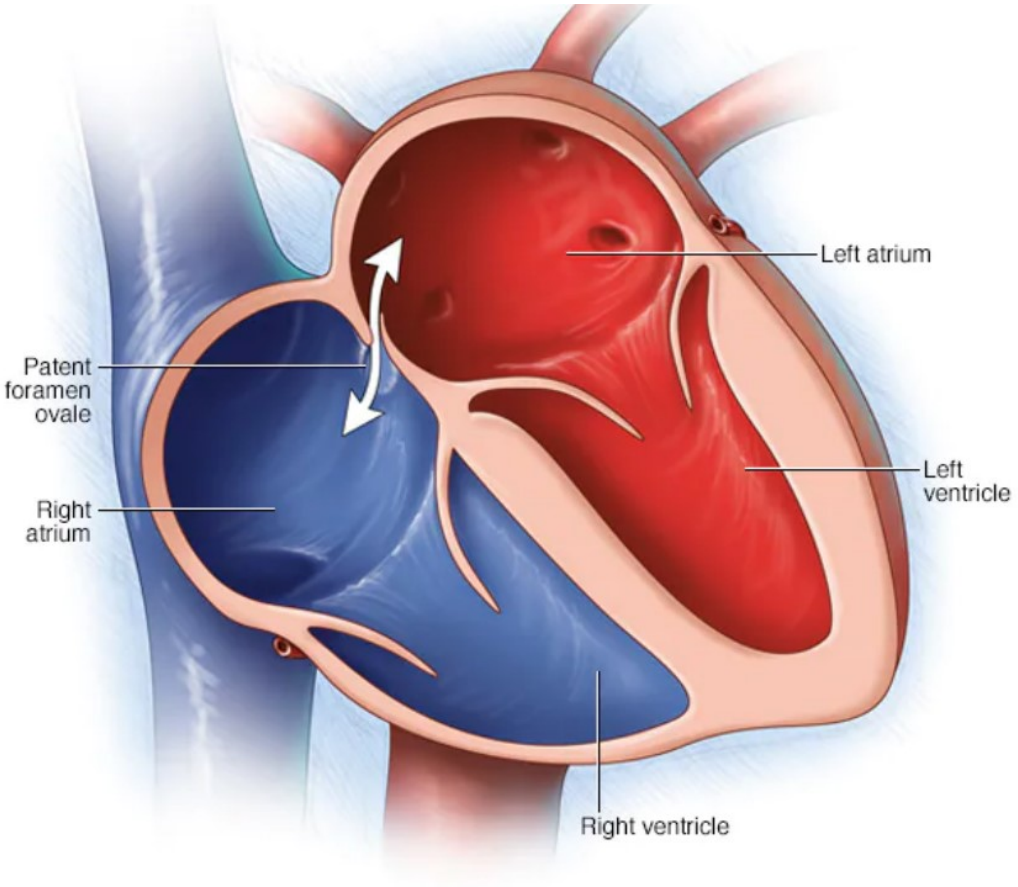





# Patent Foramen Ovale (PFO) Closure

## Information and Procedure Guide

Saskatchewan Health Authority

CS-PIER-0100-STN
MARCH 2024
Area: Saskatoon

# The Heart and Heart Valves

The heart has 4 chambers and 4 heart 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.

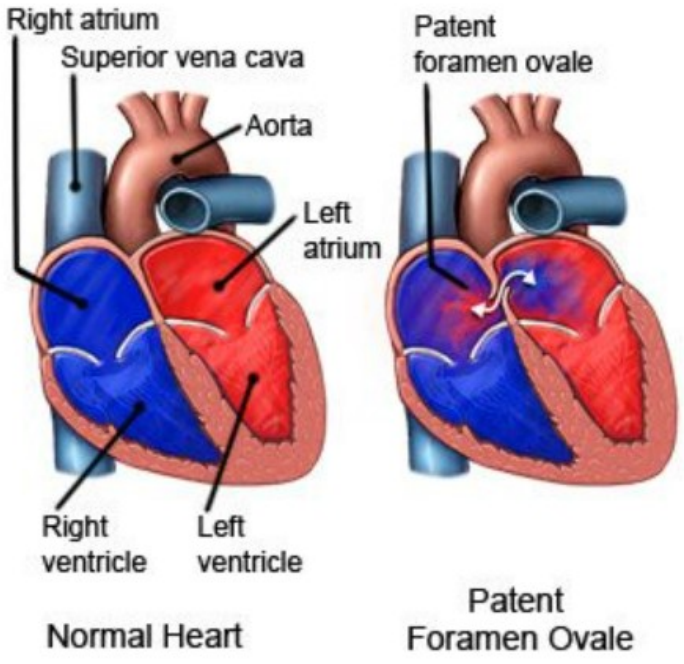
# What is a Patent Foramen Ovale?

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.

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). If a person has a stroke, and is found to have a PFO, they may be referred to a PFO cardiologist to determine if a PFO closure would be beneficial.

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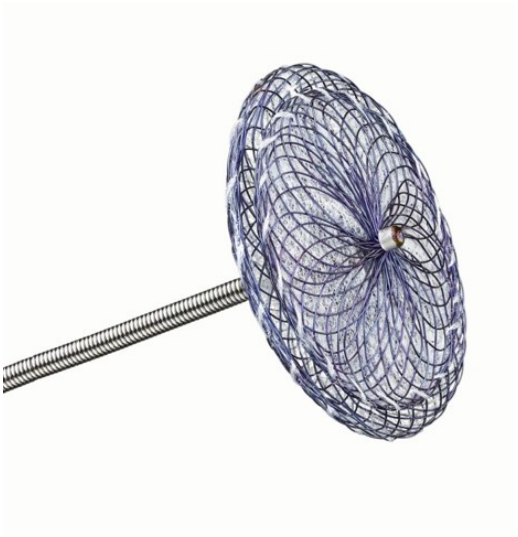
# Treating a Patent Foramen Ovale

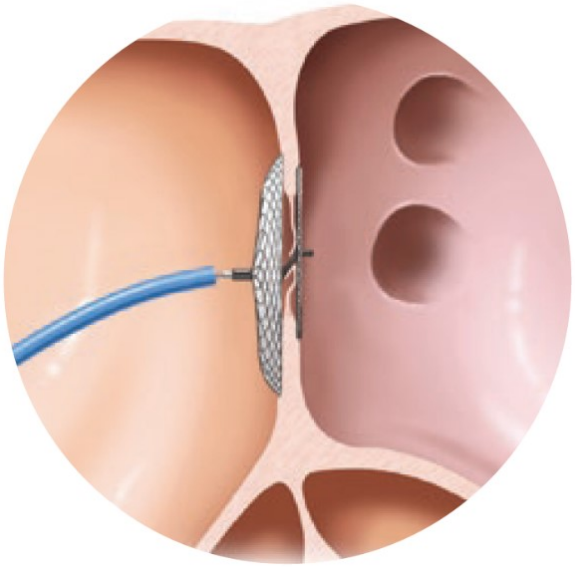
Treatment can prevent future strokes in individuals that have been diagnosed with a PFO and have experienced an unexplained stroke or 'mini stroke' (TIA).

Patent Foramen Ovale (PFO) can be treated with medications that prevent blood clots, such as blood thinners. 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.

Other options include open heart surgery or a minimally invasive procedure called a percutaneous PFO closure. Percutaneous 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.

To determine if a PFO closure is suitable for you a transesophageal echocardiogram is ordered to get a detailed look at the size, location and severity of blood flow across the upper chambers of the heart. These tests help your PFO cardiologist determine if PFO closure is for you. Your results are then reviewed by the Structural Heart Team. 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

You are given 1 to 2 weeks notice of your upcoming procedure date. You are mailed instructions about when to stop eating and drinking before the procedure. Generally, 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. Do not take any medication the morning of your procedure. Bring them with you to the hospital and a Registered Nurse on the Cardiac Short Stay Unit (CSSU) assists you in taking your morning medication.

When you arrive at the hospital the morning of your procedure, you are directed to the CSSU. Be sure to bring your provincial health card and 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.

When you arrive to CSSU, the nurses take your vital signs, do an assessment and give you your morning medications from your medication supply. Blood work is done and an intravenous line is inserted.

When it is time for your procedure, you are taken to the cardiac catheterization laboratory. An anesthesiologist provides medications to help you relax. Sometimes a general anesthetic is needed, but most people tolerate the procedure well with just relaxing medications. The procedure takes 1.5 to 2 hours.

## AFTER THE PROCEDURE

After the procedure, you are transferred back to Cardiac Short Stay (CSSU).

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.

# After the Procedure

## Going Home

Most patients go home the day after the procedure. You are able to resume gentle activities, like walking, before you go home. 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. However, exercise is important to help you recover and get back to your normal routine. Try to walk 20 to 30 minutes every day after you have healed.

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®) and a medication called clopidogrel (Plavix®) for 3 to 6 months. ASA and clopidogrel are medications to help prevent blood clots from forming on the device while it is healing. Patients are seen in 9 to 12 weeks and 1 year after their procedure. Another ECHO is done at that time and medications are reviewed.

Endocarditis can happen when bacteria (germs) gets into your blood, travels to you heart and causes an infection. To prevent or lower you risk of endocarditis, you will need to take antibiotics 30 minutes prior to any dental work that results in gum manipulation and bleeding such as routine cleanings, root canals, etc. for 6 months post ASD closure procedure. Your family doctor or dentist can prescribe this antibiotic when needed.

# After 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 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

# Post Procedural Care—Continued

## 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.

## Physical Activity

- You can go back to your normal activities gradually over 3 to 5 days. Try to do a bit more each day.
- Avoid strenuous activities like jogging, running, or lifting anything greater than 5 kilograms (10 pounds) for the next 7 days.

# After 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 magnetic resonance imaging (MRIs).

## Appointments after PFO Closure

You need follow-up bloodwork done 1 week after your procedure. You are provided with a lab requisition upon discharge from hospital.

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 Doctor** are 9 to 12 weeks and 1 year after the procedure. An echocardiogram is scheduled about 9 to 12 weeks and 1 year after the procedure.  You are notified of these appointments by mail or phone call.

**Royal University Hospital**

**STRUCTURAL HEART PROGRAM**

## Saskatoon:

Phone: 306-655-1901

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**CS-PIER-100-STN**

***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

**MARCH 2024**

Saskatchewan Health Authority

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