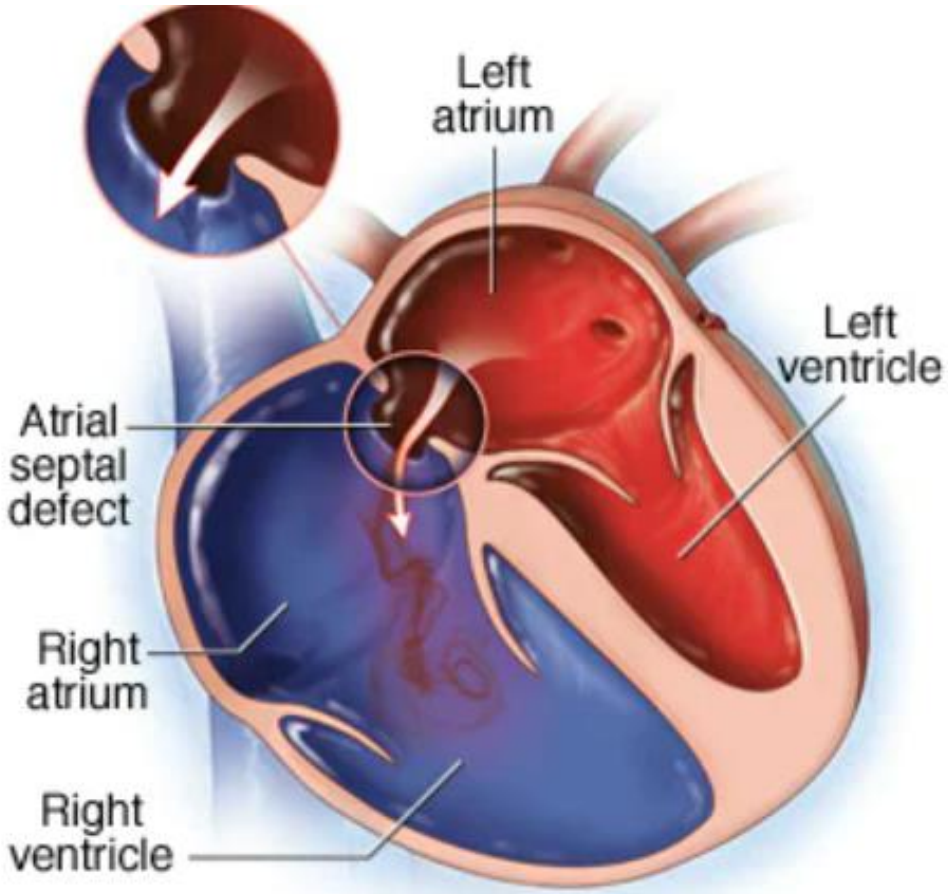


Image source: https://www.mayoclinic.org/diseases-conditions/atrial-septal-defect/symptoms-causes/syc-20369715

Atrial Septal Defect (ASD) Closure

Information and Procedure Guide

Saskatchewan Health Authority

CS-PIER-0098-REG
MARCH 2024
Area: Regina

The Heart and Heart Valves

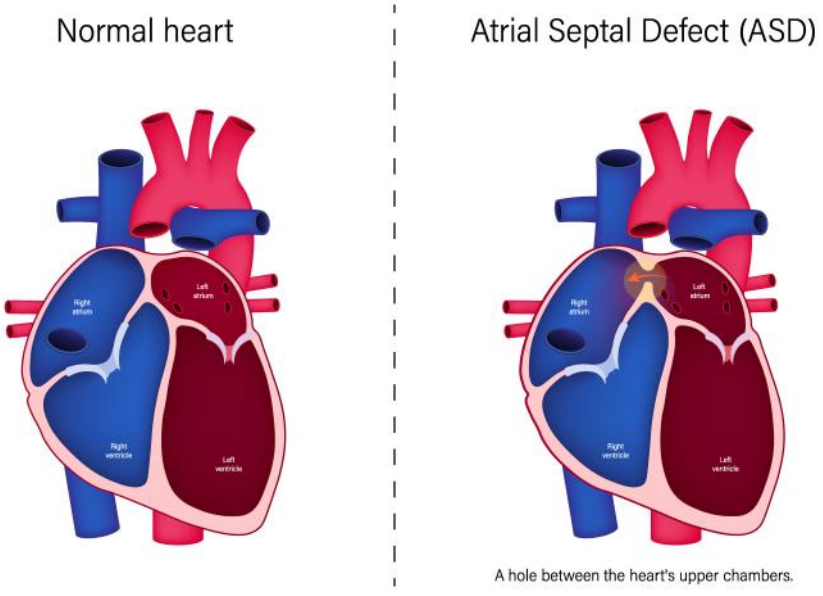
The heart has four chambers and four heart valves. The upper chambers are called atria and the bottom chambers are called ventricles. These chambers are separated from each other by heart walls. The chambers are connected by valves that act as one-way gates. When the chambers squeeze and relax, the valves 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 an Atrial Septal Defect?

An atrial septal defect (ASD) is a congenital heart condition that occurs as a baby's heart is developing during pregnancy. ASD is a hole in the heart wall between the left and right atrium (atria). The pressure in the left side of the heart is greater than the right. When an atrial septal defect is present blood will leak from the left atrium into the right atrium. When the blood leaks into the right side of the heart it results in the heart having to work harder. If the hole is large enough and left untreated, the right side of the heart can stretch out and become weak. The blood pressure in the lung's arteries can also increase and lead to pulmonary(lung) hypertension.

Not all ASD's need to be closed. Many individuals with small ASD's live normal lives and have no symptoms. Larger ASDs may result in more blood leaking from one side of the heart to the other and increasing the pressure in the lungs and strain on the heart. Symptoms may include fatigue, shortness of breath, irregular heart rhythm and an increased risk of stroke.



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Atrial Septal Defect—Treatment

Atrial Septal Defects can be closed two ways:

1) **Percutaneous (catheter based) ASD closure** is done by placing a permanent device into your heart through a large vein in your upper leg (groin). This is often the preferred method of closure, but not all ASD's can be closed percutaneously.

2) **Open heart surgery** Open heart surgery may be preferred if there are other heart abnormalities, or if a percutaneous (catheter based) closure device will not fit well inside your heart.

The most suitable method of closure will be determined by a cardiologist that specializes in the procedure.

Percutaneous ASD Closure—Workup

Structural Heart Clinic Appointment: You will meet with the structural heart coordinator and structural heart cardiologist to discuss the procedure, answer any questions you may have, review the tests you have already undergone, and order more testing if required.

Transesophageal Echocardiogram: This test measures the size, location and severity of blood flow across the septal defect.

CT Scan: May be booked to measure the size , strength, and function of the right heart, the severity of blood show (shunting) across the atrial septal defect, and ensure there are no other heart related abnormalities that may require open heart surgery.

Cardiac Catheterization: A catheter is taken up the leg or arm artery to view the heart arteries, valves, pressures, and strength. Contrast dye is injected through the catheter to visualize these structures with x-ray.

Your results are then reviewed by the Structural Heart Team. If you are approved for the ASD closure procedure, you will be placed on the waitlist. A percutaneous ASD closure is considered non-emergent and may take several months before a procedure date is booked.

ASD 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—we review the procedure details with you, complete all paperwork required for your hospital admission , perform bloodwork and a chest x-ray . 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

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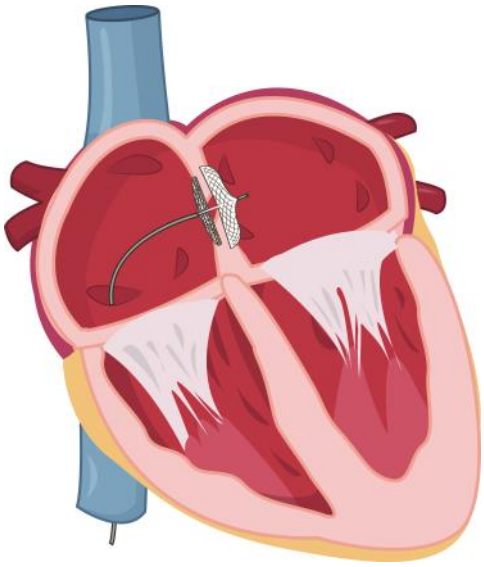
- Take your medications as directed before arriving to the hospital.
- Do not stop in admitting— use the map given to you during your PAC appointment and go directly to PCI unit (3rd floor– RGH)
- Bring all your medications in their original containers. Bring any medical devices you will need (i.e. CPAP,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

In Procedure



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- You are taken to the cardiac catheterization laboratory.
- Medical staff provide medications to help you relax (conscious sedation). You are sleepy but able to follow commands. The procedure takes 1.5 to 2 hours. After the procedure, you are taken back to PCI. After your recovery, you stay overnight in the CSU unit (3rd floor RGH).

AFTER THE PROCEDURE

- You are monitored closely for 4 to 6 hours and will be 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.
- You are transferred to the CSU (Cardiac Surveillance Unit– 3rd floor RGH) to recover overnight.
- The next morning, a chest x-ray and transthoracic ECHO are done to reassess the function and position of your new ASD 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 5kgs (10lbs) 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 prevent blood clots from forming on the device and is given lifelong. Patients are seen by their cardiologist in 2 to 3 months.

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

Endocarditis Prevention

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 the Procedural Care

Personal Care:

- Remove the bandage on your groin 24 hours after your procedure. You may leave the site uncovered or apply a new bandage 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 Health-Care 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 the 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.
- You are having 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.

After the Procedure—Continued

Physical Activity

- You can go back to your normal activities gradually over 1 to 2 weeks. 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.

Driving and Travelling

- Do not drive for 48 hours after your procedure.
- If you are driving 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.

ASD Closure Device Implant Card

After your procedure you will receive your temporary procedure card. A permanent card will be 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 any magnetic resonance imaging (MRI).

Appointments after PFO Closure

- See your Family Doctor or Nurse Practitioner 10-14 days after your procedure. You, or your family, will need to make this appointment.
- Follow up clinic appointments with your **Structural Heart Physician** will be determined by your physician post procedure. You will be notified of these appointments by mail or phone call.

TAVI & STRUCTURAL HEART PROGRAM

REGINA:

Phone: 306-766-3766

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Regina General Hospital—Medical Office Wing

1440-14th Avenue, Regina, SK

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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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