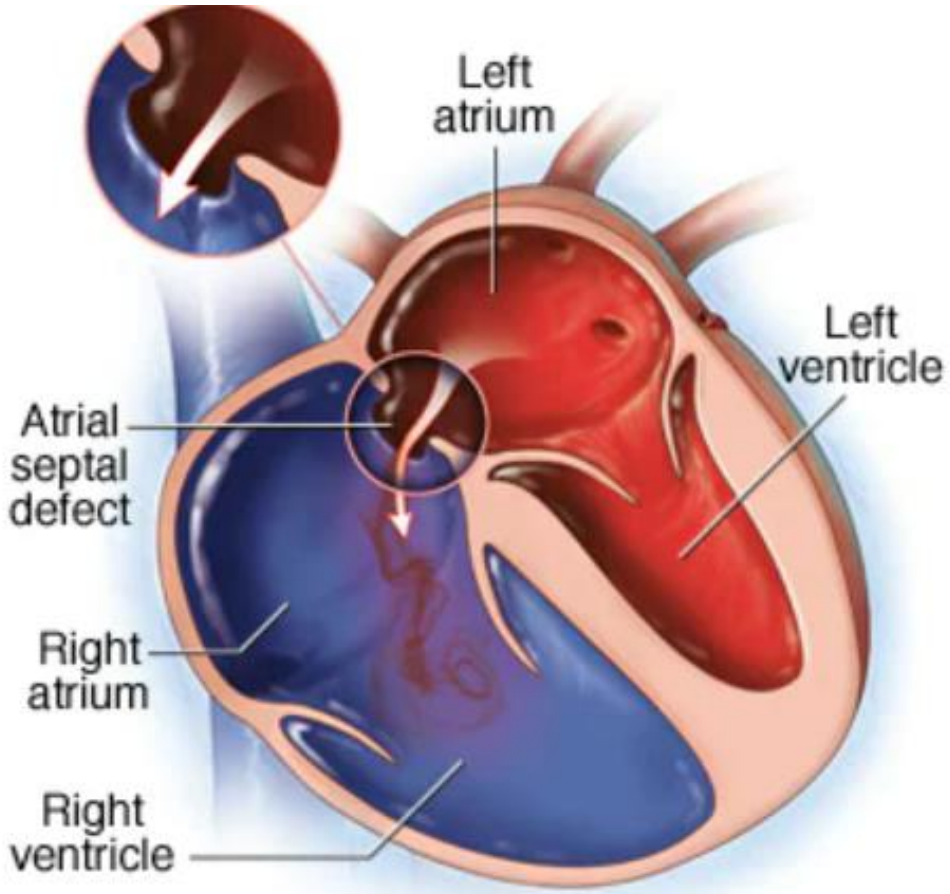


Image source: https://www.mayoclinic.org/diseases-conditions/atrial-septal-defect/symptoms-causes/syc-20369715

Atrial Septal Defect (ASD) Closure

Information and Procedure Guide

Saskatchewan Health Authority

CS-PIER-0098-STN
MARCH 2024
Area: Saskatoon

The Heart and Heart Valves

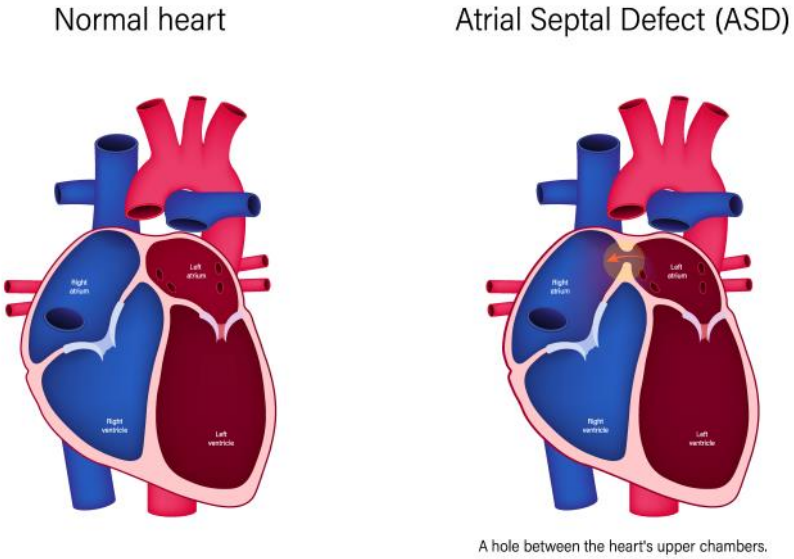
The heart has 4 chambers and 4 heart valves. The upper chambers are called atria and the bottom chambers are called ventricles. These chambers are separated from each other by heart walls. The chambers are connected by valves that act as one-way gates. When the chambers squeeze and relax, the valves 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 an Atrial Septal Defect?

An Atrial septal defect (ASD) is a congenital heart condition that occurs as the 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 hypertension.

Not all ASDs need to be closed. Many individuals with small ASDs 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 tiredness, shortness of breath, irregular heart rhythm and increased risk of stroke.



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Treating an Atrial Septal Defect

Atrial septal defects can be closed through open heart surgery or a minimally invasive procedure called a percutaneous ASD closure. Percutaneous closure is done by placing a permanent device into your heart through a large vein in your upper leg (groin).

Percutaneous ASD closure is often the preferred method of closure, but not all atrial septal defects can be done percutaneously. Open heart surgery may be preferred if there are other heart abnormalities, or if the 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. The cardiologist assesses and discusses the procedure with you.

To determine if a percutaneous closure is suitable for you, a transesophageal echocardiogram will be ordered to get a detailed look at the size, location and severity of blood flow across the septal defect. These tests will help your ASD cardiologist determine if percutaneous ASD closure is right for you. Your results are then viewed 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.

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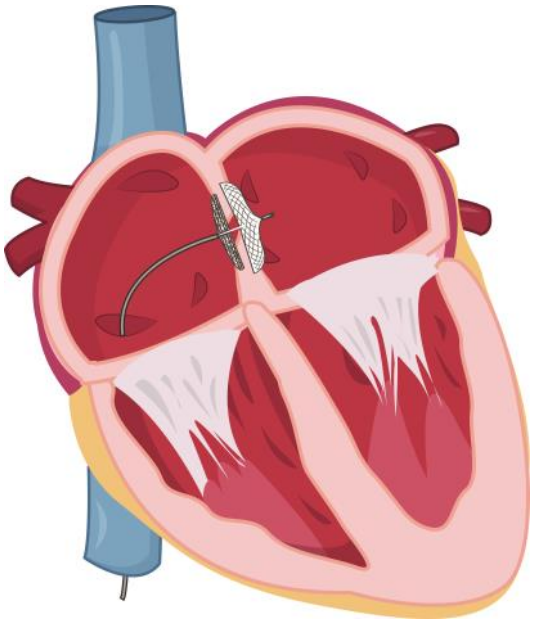

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ASD Closure Procedure

WHAT TO EXPECT

You will be given 1 to 2 weeks notice of your upcoming procedure date. Instructions are mailed to you 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 will also be 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 your medications with you to the hospital and a Registered Nurse on the Cardiac Short Stay Unit (CSSU) will assist you in taking your morning medication that day.

When you arrive at the hospital the morning of your procedure, you will be directed to the CSSU. Be sure to bring your provincial health card, all your medications in their original containers and any medical devices you will need (i.e. CPAP, cane, etc.) as you will be spending the night in hospital. Do not bring any valuables.

When you arrive to CSSU, the nurses will take your vital signs, do an assessment and give you your morning medications from your medication supply. You will also have some blood work done and an intravenous line will be inserted.

When it is time for your procedure, you will be taken to the cardiac catheterization laboratory. An anesthesiologist will provide medications to help you relax. You may need a general anesthetic to put you to sleep, in which case a breathing tube will be inserted for the procedure and is usually removed immediately after. The procedure takes 1.5 to 2 hours. After the procedure you will be transferred to the Post Anesthesia Care Unit (PACU) until you recover from the general anesthetic. After you have recovered from the general anesthetic, you will be transferred back to Cardiac Short Stay (CSSU).

AFTER THE PROCEDURE

Following the procedure, you will be monitored closely for 4 to 6 hours and will be on bedrest. When your bedrest is over, a registered nurse will help you sit at the edge of the bed. You will be 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 echocardiogram (ECHO) are done to reassess the function and position of your new ASD closure device. Registered nurses and your doctor will 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 again 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.

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

After the Procedure—Continued

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

- Redness, swelling, drainage (pus) or warmth at the incision site.
- Increased 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.

Physical Activity

- 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 5kilograms (10 pounds) for the next 7 days.

After the Procedural 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.

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 magnetic resonance imaging (MRIs)

Appointments after ASD Closure

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

See your Family Doctor or Nurse Practitioner 10 to 14 days after your procedure. You or your family, will need to make this appointment.

Follow up clinic appointments with your **structural heart doctor** are 9 to 12 weeks after your procedure and 1 year after your procedure. An ECHO will also be scheduled approximately 9 to 12 weeks after your procedure and 1 year after your 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-0098-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

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