

# Catheter-based Atrial Septal Defect (ASD) Closure



**Information for patients,  
families, and friends**

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**WRHN**

@ Queen's Blvd.

Waterloo Regional  
Health Network

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# What is atrial septal defect?

An atrial septal defect (ASD) is an abnormal opening (hole) in the wall between the two upper chambers (atria) of the heart.

These defects are present from birth. They vary in size from that of a penny to one the size of a loonie.

The hole increases the amount of blood that flows through the lungs. This can damage the lungs and cause heart failure. In older patients with ASD, stroke is also more common.

## What are the symptoms ?

The severity of symptoms often depends on the size of an ASD. Larger holes may cause:

- tiredness
- shortness of breath
- arrhythmia
- enlarged heart



# The device and its purpose

The Amplatzer Septal Occluder is a device that can be placed in your heart to close the hole. This is done through minimally invasive, catheter-based technique.



Figure 1 – Amplatzer Septal Occluder

The device consists of two circular wire-mesh discs connected by a wide waist in the center. The waist is designed to fit into the hole in your heart. The waist is sized to your defect. The discs are covered in medical fabric.

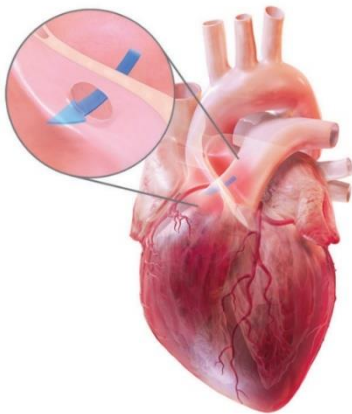


Figure 2 – Heart with ASD

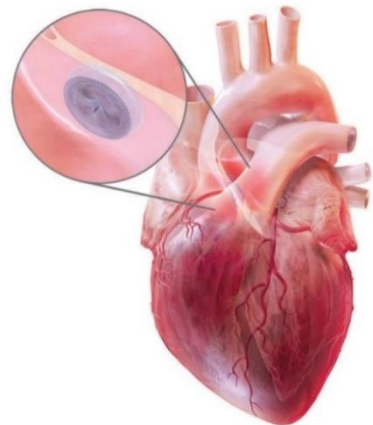


Figure 3 – Implanted Amplatzer Septal Occluder

Once the device is placed in the ASD, it will remain permanently implanted in your heart. Over time, your body's natural healing process will cover the device with tissue. Until this process is completed, you will need to take anti-platelet medication to protect the device.

## How do I prepare for the procedure?

### *Planning for the procedure*

Before your ASD closure procedure, your doctor will assess and order tests that need to be considered before the procedure. These may include:

- Special echocardiogram called transesophageal echo (TEE)
- Electrocardiogram (ECG)
- Blood work
- Change to your medications
- Your overall medical status

Once the necessary test results are available, you will meet with the cardiologist (interventionalist).

You will discuss the procedure, potential risk factors and any other treatments. During this visit, you will have a chance to ask questions.

If you decide to go ahead with the ASD closure, you will receive the date for your procedure.

### *The night before your procedure*



Take a shower or a bath the night before or morning of your procedure. Please refrain from using scented products.

Ensure you have a responsible adult to drive you home from the hospital. Have their contact number available for the recovery room nurses so your discharge timing can be arranged. The length of stay depends on many factors. Some people will be able to go home 6 hours after their procedure, others will need to stay overnight.

If you go home the same day, a responsible adult should stay with you for the first night. This will not be necessary should you need to stay in the hospital overnight.



## *The day of your procedure*

You may have a light meal (e.g., juice, toast) up to 2 hours before your scheduled procedure.



Take your usual medications in the morning unless you were told otherwise.

Please bring all prescription medications in their original containers or blister pack(s) to the hospital.

For your comfort, wear loose clothing. DO NOT bring valuables (e.g., jewelry/money) to the hospital.

### **Please bring with you:**

- ☐ Name and number of responsible adult who will drive you back home
- ☐ Your medications in original packaging
- ☐ A book or a magazine to read while you wait
- ☐ Your dentures
- ☐ Your glasses/contacts, as well as the case
- ☐ Your hearing aids
- ☐ Your Ontario Health Card



Please arrive at the hospital 2 hours before your booked procedure time. **Remember that your procedure time is approximate only.** Cardiac



Catheterization Lab deals with many medical emergencies. There may be unavoidable delays. Any delays will be communicated to you and your loved ones through our nursing staff.

## What will happen at the hospital?

Once you arrive at the hospital, you will need to register at the first-floor registration area. It is located next to the gift shop.

Once you are registered, you will be asked to go to the Cardiac Catheterization Lab found on the second floor. If you are unsure of where to go, you can ask one of our volunteers for help.

On arrival in the Cath Lab, you will be assessed by the nurse. During assessment, information about **your** medications, medical history and allergies will be reviewed.





An intravenous (IV) will be started in your arm. This will be used to give you fluid and medications before, during and after the procedures.

The doctor performing the procedure will speak to you, review the procedure and answer questions.

You will be given an opportunity to go to the bathroom before you are taken into the procedure room.

## How is the procedure performed?

ASD closure procedure is performed in cardiac catheterization laboratory. Once in the procedure room, you will lie down on a narrow table under x-ray camera. This camera will move around your body during the procedure.

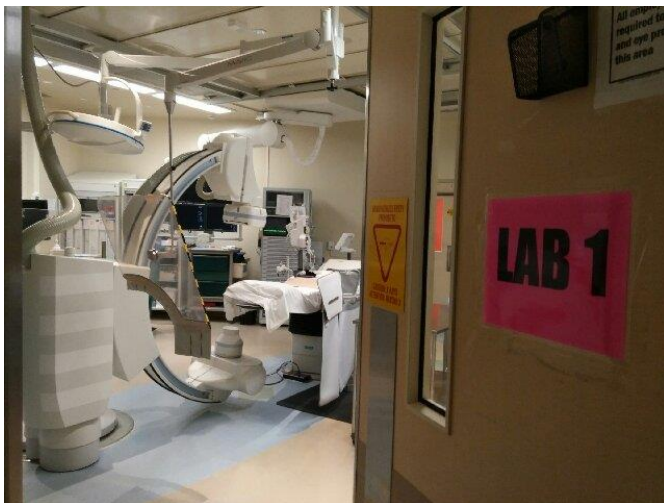


Figure 4 – WRHN Cath Lab

You will be given sedation to keep you comfortable and relaxed. Your heart rhythm and vital signs will be monitored during the entire procedure.

Your groin will be washed with a cold antiseptic solution and then you will be covered with sterile drapes. Do not touch the washed areas.

Your doctor will inject local anesthetic into your groin to ‘freeze’ the site.

A short tube called a ‘sheath’ will be inserted into a vein in your groin. It will help guide other equipment, like the septal occluder device, to your heart.

You may feel some pressure at the groin site. This is normal. If you have a lot of discomfort, please let our health care team know.

The doctor will also use long, thin tubes called ‘catheters’ to inject colourless dye into your heart. This dye can be easily seen on x-ray.

The procedure usually takes about 1-2 hours.

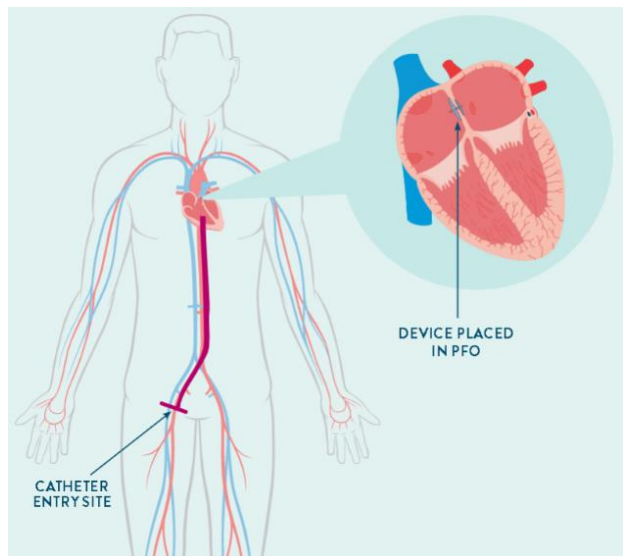


Figure 5 – Groin access and device placement

# Radiation facts



Having ASD closure procedure exposes you to radiation. The benefits of this small radiation exposure outweigh the risk.

Our MRT (Medical Radiation Technologists) will monitor the radiation dose you receive during the PFO closure procedure.

Speak with your doctor if you have any questions.

## What happens after my procedure?

Once the procedure is finished, your doctor will remove the “sheath” from your groin. Few minutes of manual pressure will be needed to minimize any bleeding at the puncture site.



Figure 7 - PHIU

You will then be transferred to our Pre/Post heart Investigation Unit (PHIU). It is located on the second floor, down the hall from the cath lab.



Our PHIU nurses will provide all the nursing care you will require. They will monitor your vital signs, your groin access site, and pulses in your leg. They will also check your neurovitals.

You will need to remain in bed with your legs straight for about 2 hours. For your comfort, the head of your bed can be raised slightly.

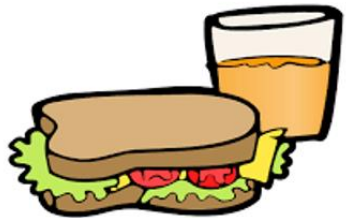


### **Do Not:**

- Bend the leg used for the procedure as this may cause bleeding
- Cross your legs as this may block circulation to your feet

Your PHIU nurses will let you know when you can safely get up. They will assist you with slowly standing up.

You will be given a light snack and a drink. It is important to drink fluids to help remove the contrast dye from your body.



The presence of visitors after your initial recovery will be assessed on an individual basis, as well as hospital policies at the time of your procedure.

Please expect to stay in PHIU at least 6 hours after your ASD closure procedure and possibly overnight.



# Going home

Discharge home education and care instructions will be provided by PHIU nurses before you leave.



## ***Go to Emergency Department or call 911, if:***

- You have changes in your sight or speech
- You have severe pain, numbness, coolness, or weakness in your leg
- You have sudden uncontrolled bleeding, swelling or sever pain at the puncture site
- You start feeling racing heart (palpitations)
- You start experiencing shortness of breath
- You get discomfort when breathing while lying flat



## ***Call your family doctor right away if:***

- You develop a fever of 38.0°C or higher
- You develop a rash
- Your puncture site becomes swollen, red, warm to touch, more tender; or if it begins draining pus (yellow-green discharge)
- You have exacerbation of migraine headaches, if previously present



# Access site and self-care

Have a responsible adult with you for 24 hours.

Remove your groin dressing 48 hours after your procedure. Keep the area dry and clean.

Shower do not soak the area for 3 days.

Support your groin by applying pressure to it for 24 hours. Your nurse will show you how.

Do not strain when having a bowel movement.

Avoid strenuous walking for 24 hours

No lifting anything over 10 pounds for 7 days.

No driving for 24 hours.

If you work at a job where you usually sit, you can go back to work in 3 days. If you do physical labour, you need to stay off work for 1 week.

For 6 months you will need to take **antibiotics** before any dental cleaning or procedures. This is to prevent infection on the new device.

You may be instructed to take **blood thinner** medications. They will stop clots forming on your new device. Your doctor and nurse will let you know.



You may want to write important things to remember here, or questions you may have:

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**References:**

Figure 1 – Amplatzer Septal Occluder

<https://www.cardiovascular.abbott/us/en/hcp/products/structural-heart/structural-interventions/amplatzer-septal.html>

Figure 2 – Heart with ASD

<https://www.structuralheart.abbott/patients/treatment/asd-closure-atrial-septal-defect.html>

Figure 3 – Implanted Amplatzer Septal Occluder

<https://www.structuralheart.abbott/patients/treatment/asd-closure-atrial-septal-defect.html>

Figure 5 – Femoral vein access

