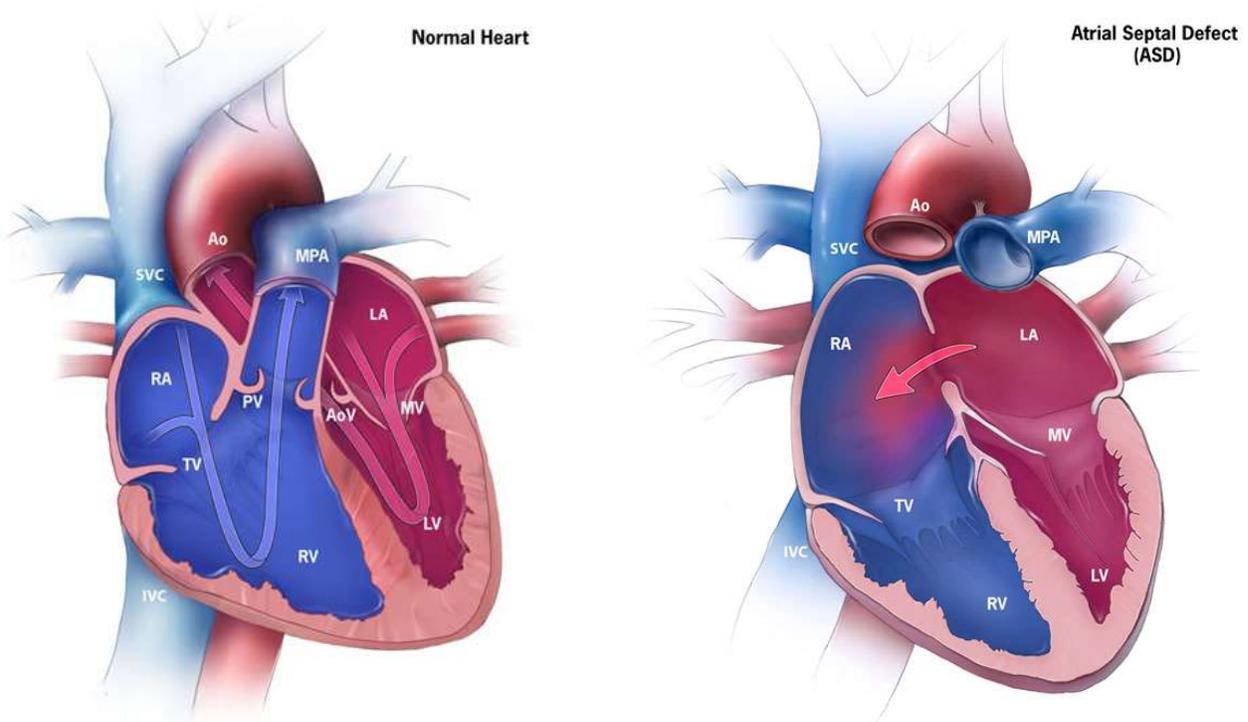


# Atrial Septal Defect

The heart is made up of four chambers, two **atria** on the top, and two **ventricles** on the bottom. The right atrium (RA) receives all the blood coming back to the heart from the body, sends it to the right ventricle (RV), and then to the lungs. The left atrium (LA) receives the newly oxygenated blood from the lungs and sends it to the left ventricle (LV), where it is pumped to the whole body, bringing oxygen to every organ.

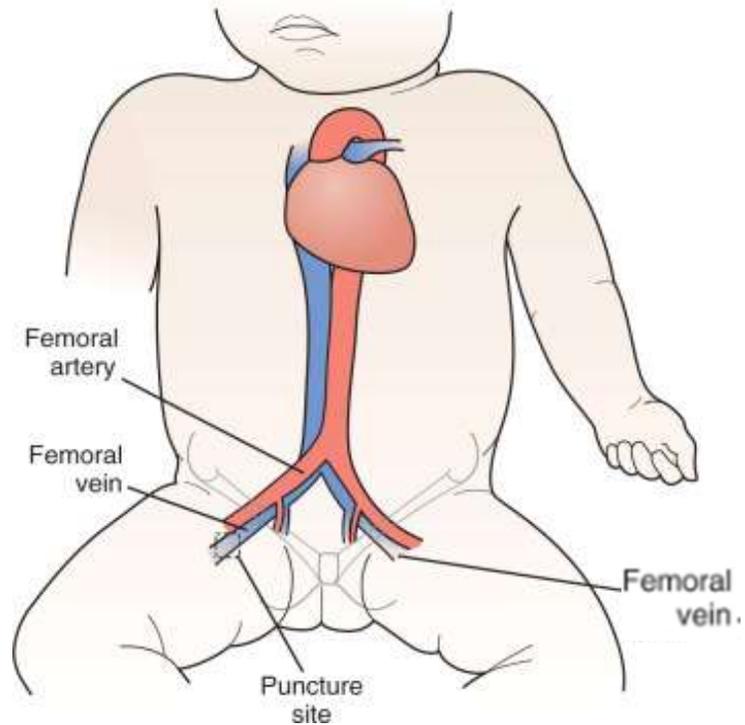
An atrial septal defect (ASD) is a hole in the wall (septum) between the right and the left atria. The blood then flows from the left atrium through the hole to the right atrium and then back to the lungs. This can cause the right atrium and right ventricle to enlarge because of the extra blood flow through the ASD.

Most people with an ASD have no symptoms in childhood. But if left untreated, decades later, an ASD can cause difficulty breathing; difficulty with exercise; poor growth; irregular heartbeats; pulmonary hypertension (high pressure in the lungs); or heart failure. A procedure may be required to close this hole and prevent future symptoms.



## How Do We Access the Heart?

- An ultrasound machine is used to help identify the correct blood vessel in the groin
- A local anesthetic (numbing medicine) is given to the puncture site
- A needle enters this site and is used to access the blood vessel, where a sheath is placed for the rest of the procedure. The sheath keeps the vessel open.
- Various catheters are used throughout the procedure to close the ASD



## Tools Used During a Procedure

### Sheath

A sheath is a short hollow tube that allows different catheters to go in and out of the body



### Catheter

A catheter is a long, thin, flexible tube



## What Happens DURING the Procedure?

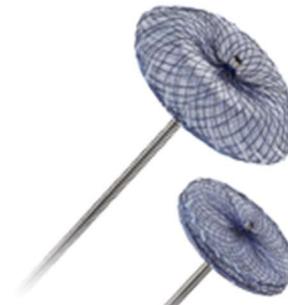
- Besides the Cath Lab Team, the Echo Team will be present to help get extra images of the heart
- A soft balloon, placed at the end of a catheter, is passed up to the heart through the sheath in the groin
- The balloon is placed across the ASD, which can be seen on both x-ray and *echo* (echo is short for echocardiogram, which uses sound waves to make special images of the heart)
- The balloon is inflated, and measurements are taken to determine what size *closure device* will be used. The closure device is used to close the ASD.
- When measurements are complete, the sizing balloon is removed, and a closure device is prepared
- Detailed images and measurements are taken to choose the best device to close the ASD
- Once the Cath Lab and Echo Teams agree that the device is in the correct position, the device is released from the catheter
- The catheter is then removed from the body, and the device is left behind, closing the ASD
- The team then observes for about 10 minutes to confirm the device has not moved
- At the end, all catheters and sheaths are removed from the groin. Manual pressure is applied by a team member to stop the access site from bleeding

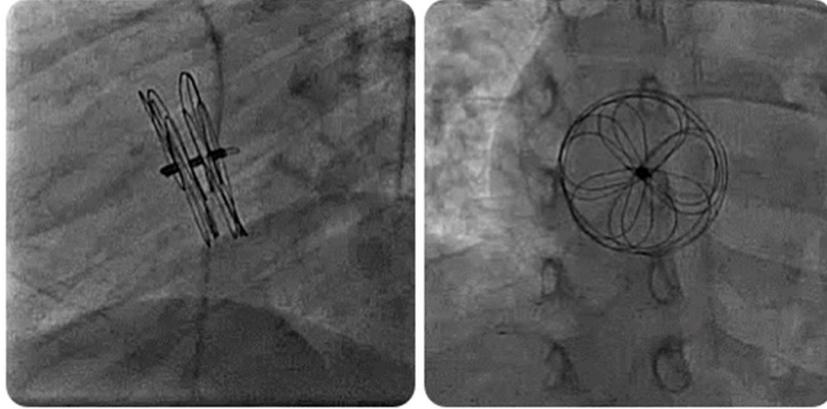
## Examples of Closure Devices

Gore Cardioform



Amplatzer Septal Occluder





The images above are what the devices look like on an x-ray.

## What Happens AFTER the Procedure?

### Short Term

- Your child must lie flat for 4 to 6 hours but will be able to eat and drink
- Plan on spending one night in the hospital
- Your child will be on antibiotics for about 24 hours
- Chest x-ray and echocardiogram will be done before you can go home

### Long Term

- Follow-up echocardiograms are typically completed at the following time points after the procedure: 2 to 4 weeks; 3 months; 6 months and 1 year after the procedure
- For the next 6 months, your child must take one dose of antibiotics one hour before any dentist appointments
- Your child will take daily aspirin for 6 months

\* A plan of care will be tailored to your child after their procedure and may be different from what is outlined above.