Intermountain® Healthcare

Left Atrial Appendage (LAA) Closure

What is LAA closure?

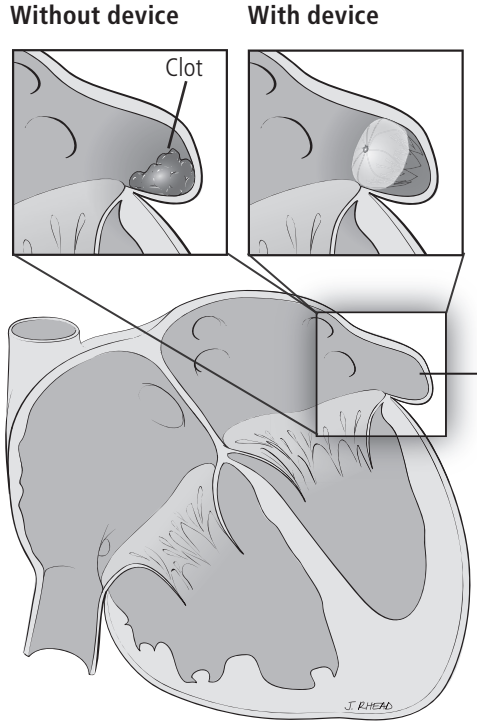
Left atrial appendage closure (LAA closure) is a procedure that closes off a small area of your heart called the **left atrial appendage (LAA).** The LAA is a pouch, shaped a bit like a windsock, on the left top chamber of your heart. In this procedure, your doctor places a small device into your heart that closes off the opening to the LAA.

Why is LAA closure recommended for me?

This procedure is recommended for patients who have atrial fibrillation (a-fib) and who are at risk for a stroke. Here's what happens with atrial fibrillation:

- In **atrial fibrillation (a-fib)**, your heartbeat is rapid or uneven. This abnormal heartbeat keeps the upper heart chambers from pumping correctly — the chambers "quiver" rather than pumping evenly.
- Because your heart is not pumping correctly, blood can collect in the LAA, where it can form blood clots.
- If a clot moves from the heart into the arteries of your brain, it can cause a stroke. For patients with atrial fibrillation, more than 90% of clots that lead to strokes come from the LAA.
- At least 25% of strokes in the U.S. are caused by atrial fibrillation. Patients with atrial fibrillation who are not treated with LAA closure or anticoagulation have an average yearly stroke risk of around 5%.

Traditionally, people with atrial fibrillation take anticoagulant pills (blood thinners) to prevent stroke. These include warfarin (Coumadin), rivaroxaban (Xarelto), dabigatran (Pradaxa), or apixaban (Eliquis). Based on recent studies, the FDA has approved LAA closure as an option for patients who have a reason to avoid long-term blood thinners.



With atrial fibrillation (a-fib), an irregular heartbeat can cause blood to collect in a pouch on the heart (the LAA). LAA closure blocks off the pouch, so blood clots don't form there.

How does LAA closure prevent strokes?

LAA closure prevents blood clots from forming in the LAA and causing problems. In this procedure, a small device is placed in your heart. The device blocks off the LAA pouch so blood can't collect there. With the LAA closed off, there is much less chance of a clot from the LAA entering your bloodstream, traveling to the brain, and causing a stroke.

How do I prepare for LAA closure?

- **Check with your insurance provider** to find out if they cover this procedure.
- **Tell your doctor about your allergies and about your medications.** Talk to your doctor about all the medications you take, including prescriptions, over-the-counter medications, and supplements. Your doctor may tell you to stop or change some medications before the procedure.
- **Fast the night before.** Don't eat or drink anything after midnight the night before.
- **Plan for an overnight stay.** Most patients are hospitalized overnight after the procedure.

What happens before the procedure?

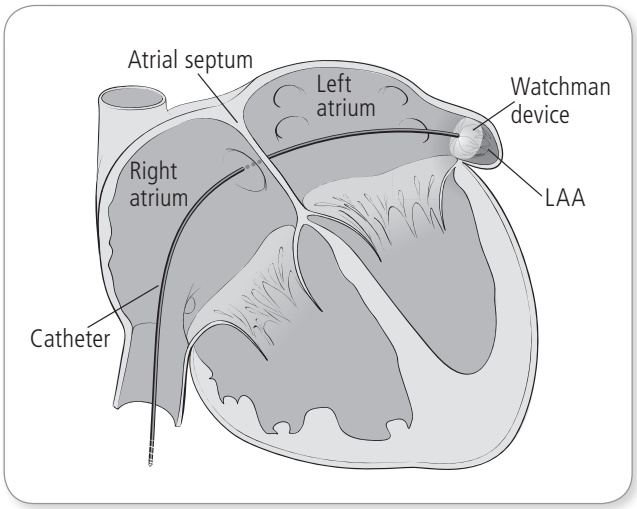
At the hospital, you'll fill out paperwork and change into a gown. Here's what will happen next:

- A nurse will prepare the patch of skin where the catheter will be inserted.
- You may have blood drawn for lab work. An IV (intravenous) line will be placed in your arm or hand to give you medications and other fluids.
- You'll be moved to the cardiac cath lab. The room may feel cool, but you will be covered with sterile drapes. You can also ask for a blanket.

What happens in the procedure?

This procedure usually takes about 90 minutes. Here is what will happen:

1. **Monitoring.** Healthcare providers will attach devices to monitor your heart rate, blood pressure, and breathing.
2. **General anesthesia.** You will receive medication so you sleep deeply, you don't feel anything, and you don't remember the procedure.
3. **Inserting the LAA closure device.** A catheter (narrow tube) will be fitted with the device. Your doctor will place the catheter into a vein in your upper leg. The catheter will then be guided through the vein to your heart.
4. **Placing the device into the LAA.** Once inside your heart, the closure device is guided through the atrial septum (the divider between the two upper chambers of the heart) and into the LAA. Pictures are taken to make sure it's placed correctly.



5. **Expanding the device.** The device opens like an umbrella to block off the LAA. The device will stay in your heart, and over time it will be covered by your body's own tissue.
6. **Removing the catheter.** The catheter will be withdrawn, and the insertion site may be closed with a stitch, plug, or pressure device.

What happens afterward?

- You'll be moved to a recovery unit or to your hospital room. A healthcare provider may hold the insertion site under pressure to prevent bleeding. Nurses will continue to monitor you overnight.
- In case you have temporary numbness or weakness in your leg, healthcare providers will take special steps to make sure you're safe when you get up. If you need to urinate and your leg is numb, it may not be safe to walk to the bathroom. You will use a urinal or bedpan instead.

What should I do when I go home?

- **The first 72 hours (3 days) after you go home:**
  - Avoid intense activity or exercise such as climbing stairs, running, biking, heavy lifting, or heavy housework.
  - Take short walks (5 to 10 minutes) four or five times a day.
  - Avoid bending or squatting.
  - If you're constipated, use an over-the-counter stool softener.
- **Returning to work:** When you go back to work depends on your physical condition and the nature of your job. Check with your doctor.

How do I care for the insertion site?

- For the first few days, watch for swelling or bleeding where the catheter was inserted. The site will probably be bruised, but this should go away within a week or so.
- Avoid soaking the insertion site in water for the first 5 days or until the wound is closed. Showers are okay after 24 hours, but don't let the water spray hit the site.
- If the site was sealed with a plug or pressure device, follow your doctor's directions to care for the device.

What will I need to do long-term?

- **Medication changes.** Your doctor will give you medication instructions before you go home. In many cases, you'll continue to take aspirin and warfarin for 6 weeks, and then aspirin and clopidogrel, and finally aspirin alone.
- **Follow-up.** Your doctor will also make a follow-up plan to check your heart. This will often include a TEE test (transesophageal echocardiogram) about 6 weeks after your procedure.

When should I call the doctor?

Contact your doctor if you experience any of the following after LAA closure:

- You faint or you feel like you may pass out.
- You have shortness of breath (it's difficult to catch your breath).
- The leg where the catheter was inserted feels cold or numb.
- You have bruising, redness, or swelling at the insertion site that gets worse, rather than going away.
- There is bleeding or severe pain at the site.
- You have a fever over 100°F.
- You have chest pain or discomfort. If pain is severe, or if it is not relieved by prescription medication for chest pain, call 911.

Talking with your doctor about LAA closure

The table below lists potential benefits, risks, and alternatives for LAA closure. Other benefits and risks may apply in your unique medical situation. Talking with your doctor is the most important part of learning about these risks and benefits. Don't be afraid to ask questions. It's important to have all your questions answered before you agree to a procedure.

Potential benefits	Risks and potential complications	Alternatives
Benefits of LAA closure can include: • Less chance of a blood clot from the LAA entering your bloodstream. • Avoiding the risks and cost of anticoagulant medication.	**Problems associated with placing an LAA closure device are rare, but the risks include:** • An accidental hole punctured in your heart that could cause blood to collect in the sack around your heart. This might cause pressure around your heart that keeps it from pumping enough blood (a problem called cardiac tamponade). If this happens, you might need a procedure to drain the excess blood or open heart surgery to repair the tear. • A collection of blood around the vessel puncture site or improper wound healing. • Allergic reaction to contrast dye. • Anesthesia risks. • Blood clots or air bubbles in the lungs or other parts of the body. • High blood pressure (hypertension) or low blood pressure (hypotension). • Heart attack. • Infection in your heart, infection around your heart, or fluid around your heart. • A blood clot in the vessels of the lung (pulmonary embolism). • Kidney failure or respiratory (breathing) failure. • Stroke or temporary stroke-like symptoms. • Bleeding in your stomach. • Major bleeding that requires a blood transfusion. • Misplacement of the device, the inability to place the device in the correct position, or the inability to remove the device if necessary. • The device moving out of place if it does not fit properly. If this happens, you may need a procedure or surgery to remove the device. • Damage to blood vessels or heart valves. • Allergic reaction to the implant materials. • A sore throat and possibly esophageal perforation. • Blood clots on the device. • Remaining on anticoagulant medicine if the device doesn't properly close off the LAA. • Death.	The alternative to LAA closure is taking anticoagulant medication.

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