

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 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?

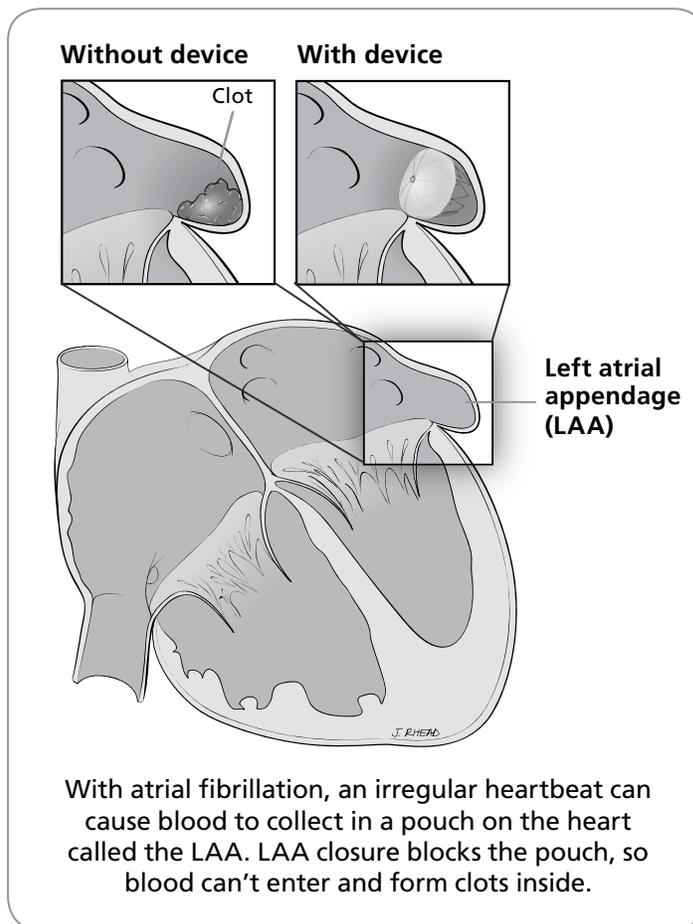
This procedure is recommended for patients who have **atrial fibrillation (a-fib)** and are at risk for a stroke but cannot take long-term blood thinners. Here's what happens with atrial fibrillation:

- In a-fib, your heartbeat is rapid or uneven. This abnormal heartbeat keeps the upper heart chambers from pumping correctly. The chambers “quiver” or shake instead of pumping evenly.
- When your heart doesn't pump correctly, blood can collect in the LAA, where it can form blood clots.
- If a clot moves from the heart into the blood vessels in your brain, it can cause a stroke. For patients with a-fib, 9 out of 10 strokes are caused by clots that come from the LAA.
- For every 4 patients who have a stroke in the U.S., at least 1 is caused by a-fib. And, in 100 patients with a-fib who are not treated with LAA closure or anticoagulant (blood thinner) medicines, 5 are likely to have a stroke.

In most cases, people with a-fib take blood thinners to prevent stroke. These include:

- Warfarin (Coumadin)
- Rivaroxaban (Xarelto)
- Dabigatran (Pradaxa)
- Apixaban (Eliquis)

The FDA has approved LAA closure for patients who can't take blood thinners long term.



How does LAA closure prevent strokes?

During LAA closure, the doctor places a small device in your heart with a **catheter** (a thin, flexible tube with special tools inside). The device blocks the entrance to the LAA pouch, keeping blood from collecting inside. When the LAA is closed, there is much less chance of a clot from the LAA entering your bloodstream, traveling to the brain, and causing a stroke. However, **blood thinners are the most effective means of preventing stroke for people with a-fib**. This procedure is only for patients who can't take blood thinners long term.

How do I get ready for LAA closure?

- **Check with your insurance provider** to find out if they cover this procedure.
- **Tell your doctor about any allergies and about the medicines you take.** List all of your medicines, including prescriptions, over-the-counter medicine, herbs, or vitamin supplements. Your doctor may tell you to stop or change some of them before the procedure.
- **Don't eat or drink anything** after midnight (12:00 AM) the night before your procedure.
- **Plan to stay overnight.** Most patients stay in the hospital the night after the procedure.
- **Make sure you have someone to take you home and stay with you** the day after your procedure.

What happens before the procedure?

At the hospital, you'll fill out some forms and change into a gown. Then:

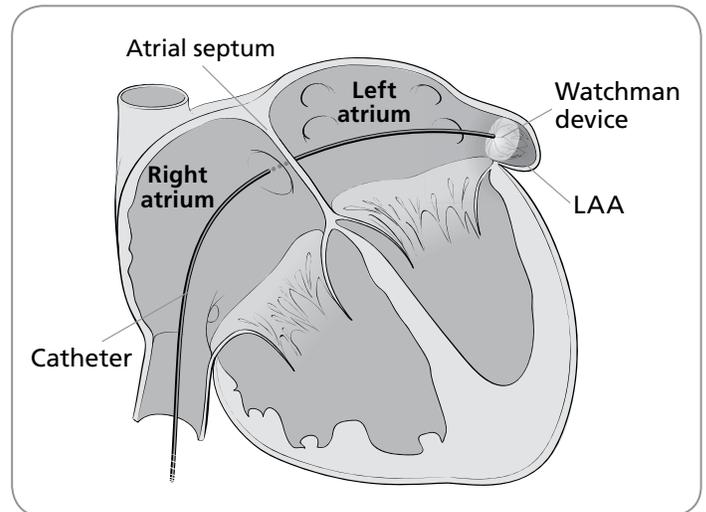
- A nurse will clean and shave (if necessary) the patch of skin on the upper leg (groin) where the catheter will be inserted.
- You may have blood taken for lab work. An IV (intravenous) line will be placed in your arm. This is for medicines and other fluids.
- You'll be moved to the cardiac catheterization (cath) lab. The room may feel cool, but you will be covered with sterile drapes. You can also ask for a blanket.

What happens during the procedure?

This procedure usually takes about 90 minutes.

- 1 Your care team will connect you to devices that check your heart rate, blood pressure, and breathing during the procedure.
- 2 You are given medicine to make you sleep. You won't feel anything or remember the procedure.
- 3 The doctor makes an incision (cut) in your upper leg to reach a vein. The catheter is moved through the vein to your heart.

- 4 Once inside your heart, the device is moved through the atrial septum, which divides the two upper chambers of the heart, and into the LAA. The doctor looks at pictures from the camera on the catheter to make sure the device is in the right place.



- 5 The device is opened (like an umbrella) to block the LAA and the catheter is disconnected. The device will stay in your heart. Over time it will be covered by your body's own tissue.
- 6 The catheter is taken out, and the incision in your upper leg is closed with a stitch, plug, or pressure device.

What happens after the procedure?

- You'll be moved to a recovery unit or hospital room. A healthcare provider may continue to put pressure on your incision to prevent bleeding. Nurses will continue to check on you overnight.
- Your care team will take special steps to make sure you're safe when you get up. This is because you may have temporary numbness or weakness in your leg. If you need to urinate (pee) and your leg is numb, it may not be safe to walk to the bathroom. You will need to use a urinal or bedpan instead.

What should I do when I go home?

Follow all instructions given to you by your care team when you leave the hospital.

The first 72 hours (3 days) after you go home:

- **Don't do any intense activity or exercise**, such as climbing stairs, running, bicycling, heavy lifting, or heavy housework.
- **Take short walks** (5 to 10 minutes) 4 to 5 times each day.
- **Don't bend over or squat.**
- **Use an over-the-counter laxative** for constipation, if needed.

You can go back to work when your doctor says it's okay.

How do I care for my incision?

If you have stitches:

- **Watch for swelling or bleeding** at your incision site over the first few days. You will likely have a bruise, but this should go away after a week or so.
- **Don't take a bath or use a hot tub** for the first 5 days or until your incision is closed. You can take a shower after the first 24 hours (1 day), but don't let the water spray hit the site.

If your incision was sealed with a plug or pressure device, follow the instructions given to you by the cath lab team.

What will I need to do long-term?

- Your doctor will give you **instructions for your medicine** before you go home. You will likely need to take aspirin and warfarin for 6 weeks. Your doctor may change your medicine at that time, depending on your recovery and health conditions.
- Your doctor will check your heart in about 6 weeks. To do this, you will likely need to have an ultrasound procedure called a **transesophageal echocardiogram (TEE)**. A TEE test can show if the device is still in the right place and is working properly.

When should I call the doctor?

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

- You faint or you feel like you may pass out.
- You feel like you can't catch your breath.
- The leg with the incision feels cold or numb.
- You have bruising, redness, or swelling at the incision site that's getting worse instead of going away.
- Your incision is bleeding or you feel severe pain at the site.
- You have a fever over 100°F.
- You have chest pain or pressure. If the pain is severe, or if it does not get better after taking your prescription medicine for chest pain, **call 911**.

Talking with your doctor about LAA closure

The table below shows the 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 best way to learn about these risks and benefits. Don't be afraid to ask questions. It's important to have all your questions answered before you decide to have a procedure.

Potential benefits	Risks and potential complications	Alternatives
<p>Benefits of LAA closure can include:</p> <ul style="list-style-type: none"> • Less chance of a blood clot from the LAA entering your bloodstream. • Avoiding the risks and cost of anticoagulant medication. 	<p>Problems associated with placing an LAA closure device are rare, but the risks include:</p> <ul style="list-style-type: none"> • 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. (This is called cardiac tamponade). If this happens, you might need another 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 (from the TEE test) • Blood clots on the device. • Remaining on anticoagulant medicine if the device doesn't properly close off the LAA. • Death. 	<p>The alternative to LAA closure is taking anticoagulant medication.</p>