ATRIAL FIBRILLATION AND STROKE RISK

What is Atrial Fibrillation (AF)?

The heart pumps blood triggered by regular electrical impulses. In atrial fibrillation (AF), these impulses become irregular, causing the heart to beat too fast and unevenly. Some people feel palpitations, chest pain, shortness of breath, or anxiety, while others have no symptoms. However, AF increases stroke risk regardless of symptoms.

What is the Left Atrial Appendage (LAA)?

The left atrial appendage (LAA) is a small pouch in the left atrium (figure 1). In AF, it may not beat properly, allowing blood to stagnate and form clots.

Why Does AF Increase Stroke Risk?

Blood clots formed in the LAA can travel to the brain, blocking blood flow and causing a stroke (figure 2). Stroke risk is higher in older adults and those with conditions like high blood pressure, diabetes, or heart disease.

How Can Stroke Be Prevented in AF?

Doctors often prescribe **oral anticoagulants (OACs)** (blood thinners) to reduce clot formation and stroke risk. To be effective these must be taken daily. Aspirin and other mild blood thinners are not enough to prevent strokes caused by AF.

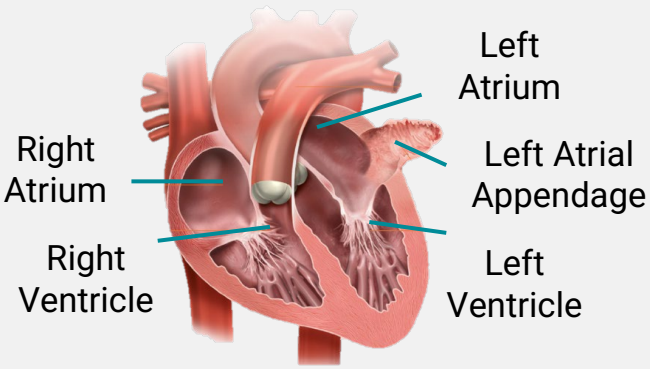

Figure 1. *Diagram of the heart*

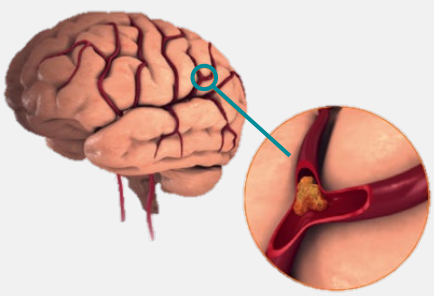

Figure 2. *Clot causing a vascular occlusion in the brain (stroke)*

ANTICOAGULATION & LEFT ATRIAL APPENDAGE CLOSURE

Are There Risks with Blood Thinners?

Oral anticoagulants (OACs) increase bleeding risk, especially in the stomach, gut, or brain. This risk is higher in patients with a history of bleeding, frequent falls, or severe kidney disease.

What If Blood Thinners Are Not an Option?

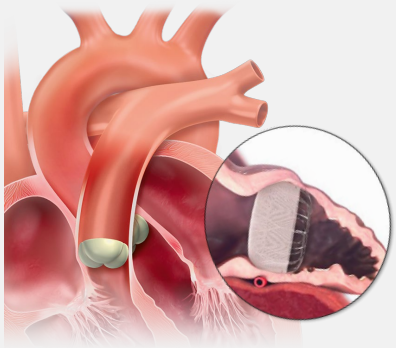

***Figure 3**. Device sealing the left atrial appendage*

For patients at high bleeding risk or those still forming clots despite taking OACs, **Left Atrial Appendage Closure (LAAC)** is a possible alternative. This procedure seals the LAA, preventing clots from escaping, much like a cork in a bottle (figure 3). LAAC is now a widely used option for stroke prevention in patients who cannot safely take OACs.

WHAT YOU NEED TO REMEMBER

✓ **Atrial Fibrillation (AF)** is an irregular and often rapid heartbeat.

✓ **AF increases stroke risk**, even if you have no symptoms.

✓ **The Left Atrial Appendage (LAA)** is a small pouch in the heart where clots can form.

✓ **Clots from the LAA** can travel to the brain and cause a stroke.

✓ **Anticoagulants (blood thinners)** help prevent stroke by reducing clot formation.

✓ **Missing anticoagulant doses** lowers their effectiveness.

✓ **Some people cannot take anticoagulants** due to a high risk of bleeding.

✓ **Left Atrial Appendage Closure (LAAC)** is an alternative to prevent stroke for those who cannot take blood thinners.

QUESTIONS & ANSWERS

What is the left atrial appendage (LAA) and why close it?	The LAA is a small pouch in the heart where most clots form in atrial fibrillation (AF) patients. Closing it prevents clots from traveling to the brain and causing a stroke.
Who is a candidate for Left Atrial Appendage Closure (LAAC)?	LAAC is for AF patients at high stroke risk who cannot take long-term blood thinners due to bleeding issues or those who had a stroke despite using them.
How is LAAC performed?	A small device is placed in the heart through a thin tube inserted via a vein in the groin. The procedure usually takes less than an hour and requires only one night in the hospital. Some centers offer same-day discharge.
Does LAAC work?	Yes. Research shows it is as effective as blood thinners in stroke prevention but without long-term bleeding risks.
Does LAAC cure AF?	No. LAAC prevents stroke but does not stop AF itself.
Do I need tests before the procedure?	Yes, an echocardiogram through a swallowed tube (TOE) or X-ray may be needed to check your heart's structure.
Is the procedure safe?	Yes, but as with any procedure, there are small risks. In experienced hands, it is considered safe, like other common heart procedures.
Are there long-term risks?	Complications are rare. Occasionally, a short period of blood thinners is needed if a clot forms on the device.

Will I need general anesthesia?	It depends. Some hospitals use general anesthesia, while others use light sedation or local anesthesia.
Is the procedure painful?	No. There is little to no pain, and you can resume normal activities after a few days.
Will I need tests after the procedure?	Yes, a follow-up TOE or X-ray is done within a few months to check that the device is properly in place.
Will I still need blood thinners?	Most patients can stop blood thinners a few weeks after LAAC. Some will need short-term aspirin or clopidogrel to help healing. In rare cases, blood thinners may still be needed for other medical reasons.
Can I feel the device in my heart?	No. Patients do not report feeling the device.
Do I need antibiotics after LAAC?	You'll receive a one-time antibiotic dose during the procedure. For six months after, antibiotics may be needed before certain medical or dental procedures.
Can I have an MRI or pass through airport security?	Yes. LAAC devices are device-detector-compatible and will not trigger airport metal detectors.
Can I play sports after LAAC?	Yes. Avoid strenuous activity for a few days, but afterward, you can resume all activities, including tennis and golf.
Can the device move or be removed?	Dislodgement is rare and usually manageable. Once healed, the device stays securely in place. Removal is rarely needed and would require minor surgery.
Is LAAC a permanent solution?	Yes. Over time, your own tissue covers the device, making it a lifelong stroke prevention measure.

AFA AFAssociation AA Arrhythmia Alliance
www.heartrhythmalliance.org

Developed by Dr Pavel Osmancik and Dr Apostolos Tzikas