

Atrial Fibrillation Ablation

What is ablation for atrial fibrillation?

Atrial fibrillation ablation is a potentially curative procedure for atrial fibrillation, also called AF or Afib. The procedure will be performed under conscious sedation or general anesthesia. Most patients are discharged home in 24 hours.

Clinical and experimental research demonstrates that the majority of abnormal electrical signals causing AF are commonly found in the muscle sleeves of the pulmonary veins as they enter the heart. These veins drain the blood from the lungs into the heart.

During AF ablation, several catheters (thin, flexible tubes with platinum rings and tips) are inserted into blood vessels (at both sides of the groin and at times at the neck) and advanced to different locations in the heart under X-ray guidance. The catheters are used to record and map the arrhythmia (abnormal heart rhythm), allowing identification of its site of origin and areas in the atria (upper chambers of the heart) exhibiting AF or abnormal electrical activities. One of the catheters has a larger tip and is used to deliver the ablation energy to each opening of the pulmonary veins. Radiofrequency energy is typically used for ablation which creates lesions by destroying (abating) small areas of heart tissue where the atrial fibrillation originates.

After several weeks of healing, a permanent circular scar is formed which blocks the abnormal electrical impulses from the pulmonary veins, thus preventing AF.

Before AF ablation, a nurse will prepare you for the procedure by starting an IV in which fluids and medications can be given. A mild sedative will be administered to make you feel sleepy. If your procedure is being performed under general anesthesia, it will be administered at this time. Your groin, neck, chest and arms will be cleansed and your groin will be shaved in preparation for the catheters to be inserted.

During the AF ablation, you will be monitored in many ways to assess vital signs, heart rhythm, your body's response to sedation and any arrhythmias. To minimize discomfort, the catheter sites are numbed with medication before the doctor inserts the catheters into your neck and groin. The catheters are then moved through your veins into the right atrium. A needle is then used to position the catheters through the septum (membrane separating the right and left atria) and into the left atrium. Once the catheters are correctly positioned, your doctor will evaluate your heart's electrical system. Energy from the catheters will be applied to the opening of the pulmonary veins to stop your heart's abnormal electrical activity. The AF ablation procedure may last three to five hours depending on the amount of abnormal electrical activity in your heart.

After the AF ablation, the catheters will be removed and the electrophysiology (EP) lab staff will apply pressure to the catheter insertion sites to stop the bleeding. A large pressure bandage will be applied and you will need to remain on bed rest and hold your legs still for several hours. Providing there are no complications, you should expect to remain in the hospital overnight for monitoring and be discharged the following day.

What are the risks associated with AF ablation?

Overall, AF ablation is considered a low-risk procedure. However, as with any invasive procedure, there are several risks which include the following:

- **Vascular damage:** During insertion of the catheters, damage to your blood vessels can occur which may result in bleeding. Manual pressure, pressure dressings, bed rest, or rarely, surgery may be required to stop the bleeding.
- **Stroke:** Blood thinners (anticoagulants) are used in order to prevent blood clotting that may lead to stroke during the ablation procedure.

- **Perforation of the heart:** When passing the catheters from the right to the left atria (required for AF ablation), your doctor will need to make small holes through your atrial septum with a long plastic tube housing a needle inside. This part of the procedure is image-guided by echocardiogram to minimize the risk of misplaced puncture and bleeding outside the heart. Despite all of these safety measures, perforation and bleeding can occur, and if so, the procedure may be terminated. Typically, the blood accumulates in a sac around the heart and most bleeding resolves just by draining out the blood with a needle. Occasionally, open heart surgery may be required. The more experienced and accomplished your doctor is, the less likely this is to occur.
- **Pulmonary vein narrowing:** When the tissue around the pulmonary veins is ablated, the scar tissue that forms may be so extensive that one or more pulmonary veins become narrowed. If there is a significant amount of narrowing (stenosis), a doctor may need to perform an angioplasty or insert a stent to keep the vein open.
- **Unusual complications:** Your doctor and the other members of your health care team are highly skilled and prepared to handle any emergency situations and unplanned problems. Extremely unusual complications may include phrenic nerve injury (possibly leading to trouble breathing) and esophageal injury possibly leading to an open channel (fistula) between the atrium and the esophagus (food pipe) which may be life-threatening. This is extremely rare and the University Hospitals team has not encountered this complication. UH specialists use several safety measures to minimize the chances of transferring the heat from ablation to the nearby esophagus.

Following your AF ablation

What should I expect during the first week?

In the several days following AF ablation, you may experience chest discomfort, mild shortness of breath and fatigue. If these symptoms persist or become severe, please notify your doctor or nurse. You need to be careful not to strain your groin. You should limit your activities and carry nothing greater than 10 pounds for the first week. You may take a shower the day you are discharged from the hospital; however, do not soak in a bath/whirlpool or swim for the first week after AF ablation. Keep the catheter sites clean and dry. Do not use powder or lotion on these sites for the first week. If you have a fever (101°F or greater), swelling, redness or drainage from the catheter sites, please notify the Atrial Fibrillation Center.

What should I expect during the next several months?

You may experience brief episodes of AF or palpitations (heart fluttering, racing heart, skipping beats) for the first two months after your AF ablation while your heart is healing. During this time, your doctor may want you to wear a monitor to record these events. If these episodes become lengthy and/or you become symptomatic, please call the Atrial Fibrillation Center.

When should I expect to see my doctor?

Your doctor will want to follow your progress after AF ablation; therefore, a follow-up visit with testing will be scheduled for three months after your AF ablation. This testing may include an ECG (electrocardiogram), an echocardiogram and, if needed, a CT scan (computed tomography) of your pulmonary veins. If you need to see your doctor sooner, arrangements will be made for you to do so.

For more information on the Atrial Fibrillation Center, please contact our clinical coordinator at **216-983-2260**. For appointments, call **216-844-3800** or visit **UHhospitals.org**.

This bulletin is intended to offer general health information for educational purposes only and does not replace the medical advice or opinion of your doctor or health care provider.