

Atrial fibrillation (AF) is commonly seen in people who have other heart problems (such as long-standing high blood pressure, heart valve problems, previous heart attacks) or thyroid disease but can often occur in otherwise healthy people without any medical problems. The electrical impulse for each heartbeat normally comes from the top of the right storage chamber (atrium) and travels to the middle of the heart, then down to the pumping chambers. In AF, the electrical impulse breaks up into many smaller impulses that travel around the atria in a very fast, irregular and disorganized manner. Many of these rapid impulses travel down the AV node and cause the ventricles to beat quickly and very irregularly. The atria beat so quickly that blood does not get pumped normally from atrium to ventricle and blood clots can form in the atria in patients who are at risk (mainly those with high blood pressure, diabetes, heart failure or previous stroke). To prevent this, blood thinners such as coumadin or dabigatran are often prescribed.

**Atrial Fibrillation** The first step in treating AF is medication. Some medications are meant to keep the heart rate slow while in AF (such as bisoprolol, metoprolol, diltiazem), and others are meant to keep the AF from starting (such as sotalol, propafenone, flecainide, dronedarone and amiodarone). Many patients respond well to medications and this can be a very effective long-term solution. In others, symptoms continue in spite of several attempts with medication and it may be necessary to consider an interventional approach to management. Ablation therapy is performed with catheters through veins in the leg and under the collar-bone. The catheters are advanced into the heart and areas involved with AF are targeted.

**1) AV node-His bundle ablation:** This type of ablation does not stop the atrium from going into AF but it eliminates symptoms. After this type of ablation the atrial fibrillation signals cannot cause the ventricles to beat rapidly and irregularly. AV node ablation is 99% successful on the first attempt and the risks are very low (<1%). However, this approach requires a permanent pacemaker which must be implanted before the ablation procedure. This may be done on the same day or some weeks in advance of your AV node ablation.

**2) Pulmonary vein ablation:** Many patients have atrial fibrillation that is triggered by one or more spots in the atrial chambers. The most common site for these abnormal rapidly firing cells is in the pulmonary veins that bring blood from the lungs to the left atrium. Pulmonary vein ablation entails insertion of catheters in the leg vein and under the collarbone, which are advanced to the heart and across

the atrial wall to the left atrium. The pulmonary veins are identified and a series of ablation 'burns' are created to 'fence off' the electrical activity in the veins. The goal of the procedure is to eliminate electrical communication between the pulmonary veins and the atrium, to prevent AF from starting. The procedure can be very long (6 hours or more) and the success rate is about 70% in patients with AF that is intermittent in nature. Another 10-20% of people having AF ablation are improved by having much fewer or shorter attacks and may be better treated by antiarrhythmic medications that previously were not effective. Some patients may require a second procedure, especially if the AF is constant and ongoing prior to the first ablation. Good candidates for this procedure are people who: 1) have otherwise normal hearts free of any scarring or damage from other heart disease, 2) have atrial fibrillation episodes that stop on their own (have periods where the heart beat returns to normal between AF episodes) and 3) few other medical problems. The risk of the procedure is up to 4% and can include bruising, bleeding, perforation of a blood vessel requiring surgery, damage to the heart requiring surgery, damage to the esophagus, and other serious complications. While age is not a strict factor, we generally recommend this ablation for younger patients because of the potential for increased risk in the elderly. For people of advanced age or who have other medical problems, AV node ablation and permanent pacemaker insertion may be a easier and safer choice.

[For more in-depth information on Atrial Fibrillation ablation, please click here.](#)

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