

## Family Medicine Clerkship Plain Language Summary

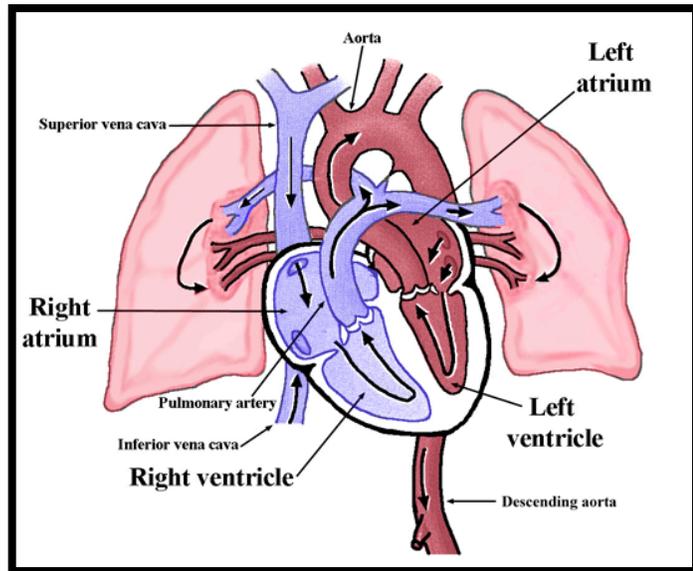
**Title:** Prevention of stroke for patients with atrial fibrillation

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### **Plain Language Summary:**

Atrial fibrillation is a type of heart arrhythmia, in other words it is a condition which causes an irregular heart beat. While it is a serious condition, it is important to know that treatment is available and that most patients with atrial fibrillation do well with treatment.

All human hearts are split into two sides, and each side is split into two chambers – one atrium and one ventricle - making a total of four chambers of the heart. The two most important chambers are the right and left ventricles. These are the big and strong chambers which are responsible for pumping blood through the lungs and the rest of the body. The other two chambers, the right and left atria, are smaller and can be thought of as accessory chambers – they help the ventricles pump blood to the rest of the body. With atrial fibrillation, the two atria no longer contract to help fill the ventricles, but the ventricles are still able to keep up and pump blood to meet the body's demands.



<http://www.vhlab.umn.edu/atlas/phystutorial/phystutorial4.shtml>

Even though the heart is able to pump enough blood to meet the body's demands, there are some risks with atrial fibrillation. The most serious risk is that a blood clot can form in one of the atria. If a blood clot forms, it can break free from the atrium and travel to the brain, causing a stroke.

To minimize the risk of stroke, all patients with atrial fibrillation are started on an anticoagulant, a medicine which prevents the blood from clotting – a “blood thinner”. While these medicines do prevent blood clots from forming, they can also cause bleeding which can be hard to stop. Until recently, there was only one medicine, called warfarin (or Coumadin), available for use in preventing blood clots. Because of the way this specific medicine works in preventing blood clots, its effectiveness can change based on an individual's genes (DNA), their diet, or the other medicines they're taking. So unlike other medicines, warfarin requires a different dose for each individual patient and patients who are taking warfarin need to go to their clinic on a regular basis to have blood work checked to see if their dose needs to be adjusted. Recently, a new blood thinner medicine, called dabigatran, has become available. This medicine has been shown to be just as effective as warfarin in preventing blood clots, however because of the specific way dabigatran works, patients can be given the same dose and do not need regular blood work or dose adjustments.

While dabigatran is equally effective as warfarin in preventing blood clots, it does have some disadvantages. First, because it is a new drug, dabigatran is very expensive. Second, there is no antidote that has shown to be effective for dabigatran, so if a person who is taking dabigatran does start bleeding, it might be harder to stop the bleeding than if they were taking warfarin.

In the end, dabigatran is equally as effective as warfarin in preventing stroke for patients with atrial fibrillation. While it might be more convenient to take dabigatran, it is more expensive than warfarin and it might be more difficult to control any bleeding complications which occur while taking dabigatran.

**Additional Resources:**

<http://www.webmd.com/heart-disease/atrial-fibrillation/dabigatran-for-atrial-fibrillation>

<http://www.webmd.com/heart-disease/atrial-fibrillation/anticoagulants-for-atrial-fibrillation>

<http://www.mayoclinic.com/health/atrial-fibrillation/DS00291>

<http://www.aafp.org/afp/2011/0101/p71.html>

**Key Words:**

Atrial fibrillation  
Anticoagulation  
Dabigatran  
Warfarin  
INR

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