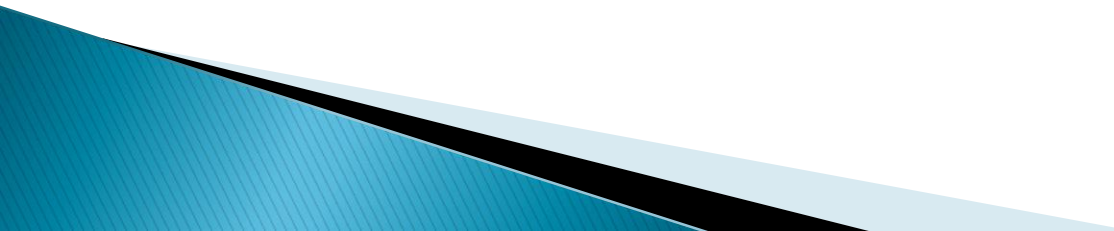


Atrial Fibrillation

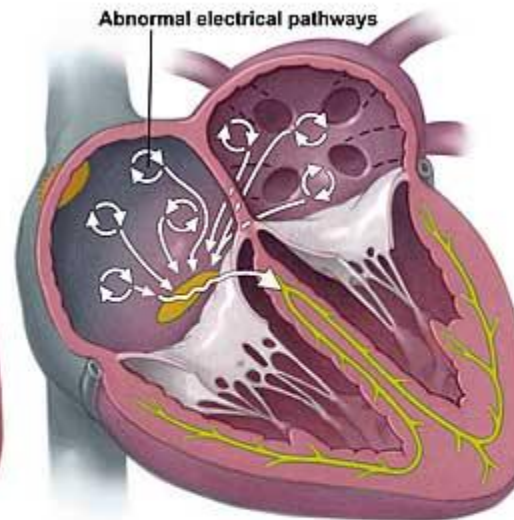
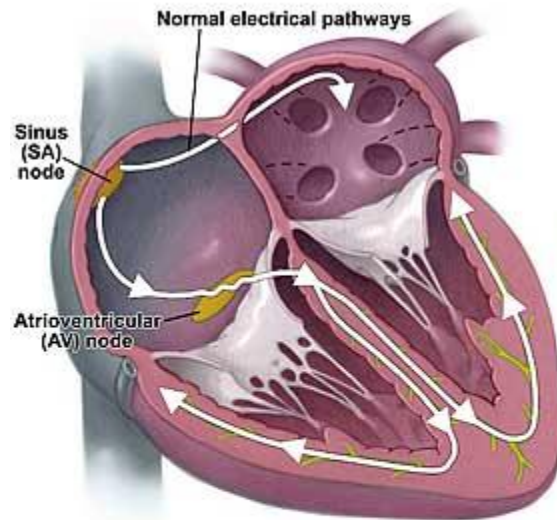
July 2016

What is Atrial Fibrillation?

- ▶ Chaotic electrical activity in the upper chambers (atria) of the heart
 - ▶ The erratic signals reaching the AV node result in the irregular rhythm characteristic of atrial fibrillation
- 







Normal sinus rhythm



Atrial fibrillation





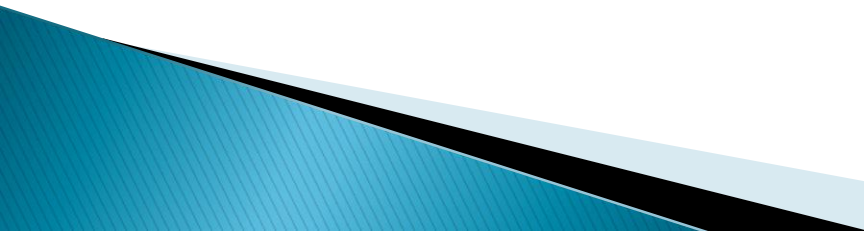
What Causes Atrial Fibrillation?

- ▶ High Blood Pressure
- ▶ Abnormal Heart Valves
- ▶ Congenital Heart Defects
- ▶ Overactive Thyroid
- ▶ Exposure to stimulants
 - Medications, caffeine, tobacco or alcohol
- ▶ Sick sinus syndrome
- ▶ Emphysema or other lung disease
- ▶ Previous heart surgery
- ▶ Viral infections
- ▶ Physiologic Stress (surgery or illness)
- ▶ Sleep Apnea

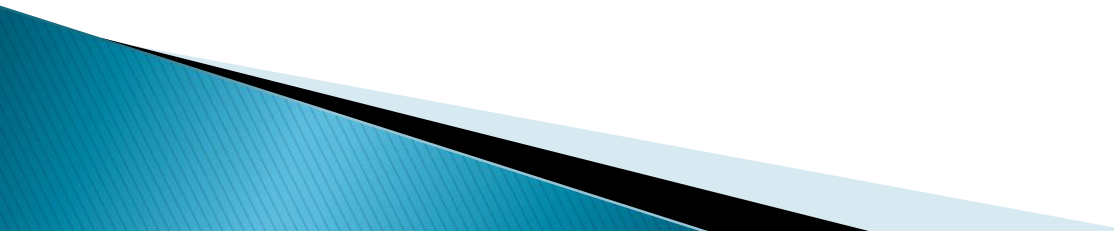
What Causes Atrial Fibrillation?

- ▶ Some people who have atrial fibrillation don't have any heart defects or damage, a condition called lone atrial fibrillation
 - In lone atrial fibrillation, the cause is often unclear, and serious complications are rare.
- ▶ In at least 10% of cases, no underlying heart problem is found

Numbers

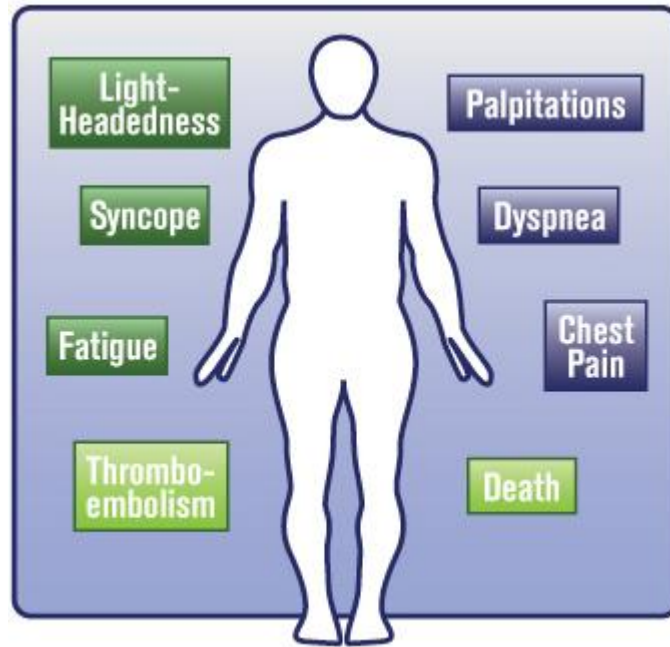
- ▶ In the US at present there are about 5 million people with atrial fibrillation
 - ▶ Atrial fibrillation results in
 - 5 fold increase in the risk of stroke
 - 3 fold increase in the risk of heart failure
 - 2 fold increase in the risk of death
 - ▶ Risk of atrial fibrillation increase with age, 8% of people over 80 have AF
- 

Why is AF a Problem?

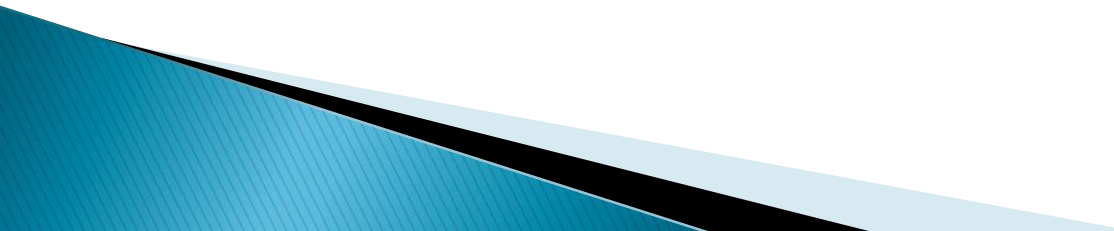
- ▶ Loss of normal control of heart rate
 - ▶ Most often atrial fibrillation presents with a very fast heart rate
 - ▶ Can lead to heart failure
- 

Why is AF a Problem?

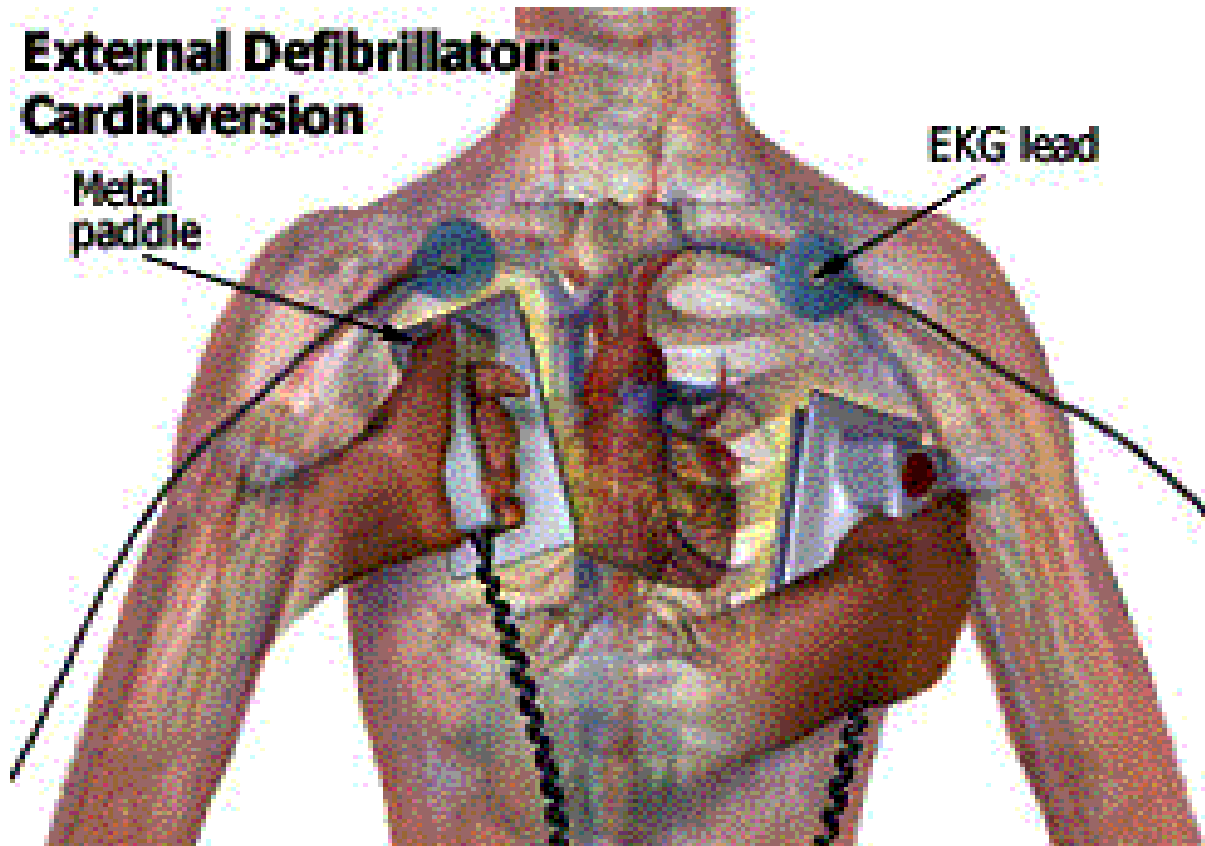
- ▶ People with AF usually have a significantly increased risk of stroke
 - up to 7 times that of the general population
- ▶ Stroke risk increases during AF because blood may pool and form clots in the poorly contracting atria and especially in the left atrial appendage (LAA).



How to Manage AF

- ▶ The question of rhythm control versus rate control
 - ▶ Rhythm control is accomplished by medications, electricity and/or surgery
 - ▶ Rate control is achieved through medications or a procedure
 - ▶ Clot prevention
- 

Cardioversion

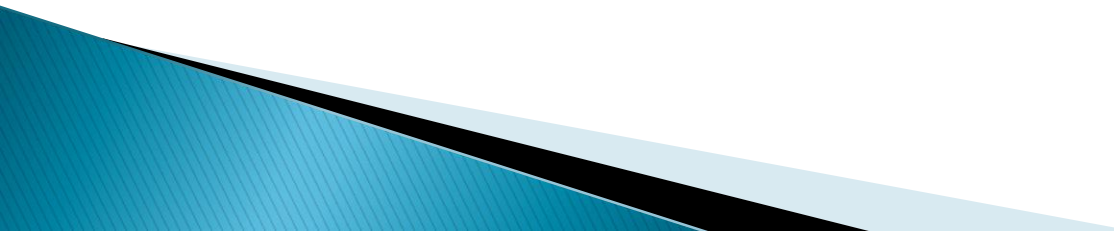


Cardioversion

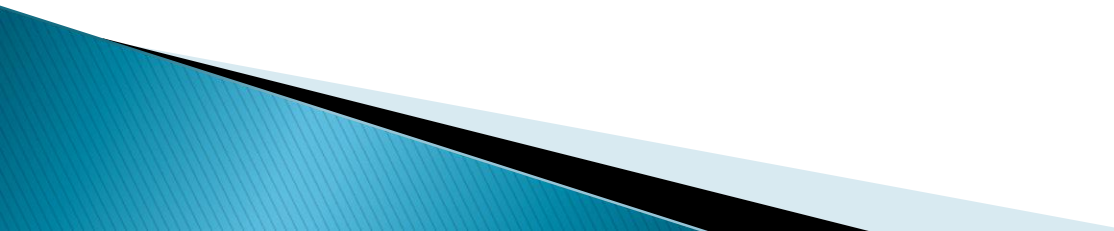


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Cardioversion

- ▶ Conversion of rhythm to normal
 - ▶ Electrical shock
 - ▶ Medications that alter conduction through the cardiac cells
- 

AFFIRM

- ▶ The AFFIRM study also showed no difference in risk of stroke in patients who have converted to a normal rhythm with anti-arrhythmic treatment, compared to those who have only rate control
 - ▶ Must be individualized to patient and cause
- 

Rate Control

▶ Medications

- Interfere with conduction through the AV node
- Beta blockers
 - Metoprolol, atenolol
- Calcium channel blockers
 - Verapamil, diltiazem
- Digoxin

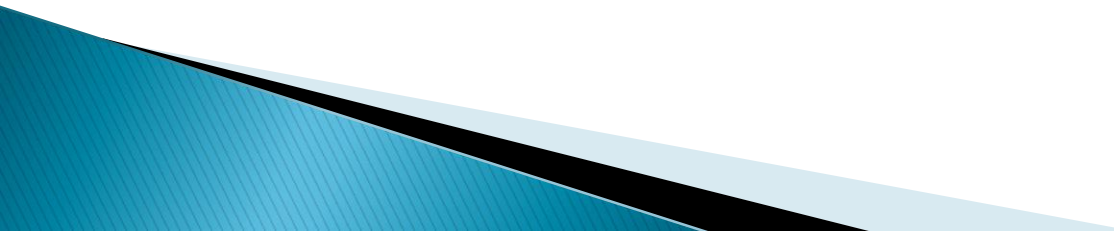
Anticoagulation

- ▶ Clot prevention
- ▶ Aspirin
 - Lower risk
- ▶ Coumadin or warfarin
 - INR 2 to 3
- ▶ Newer agents

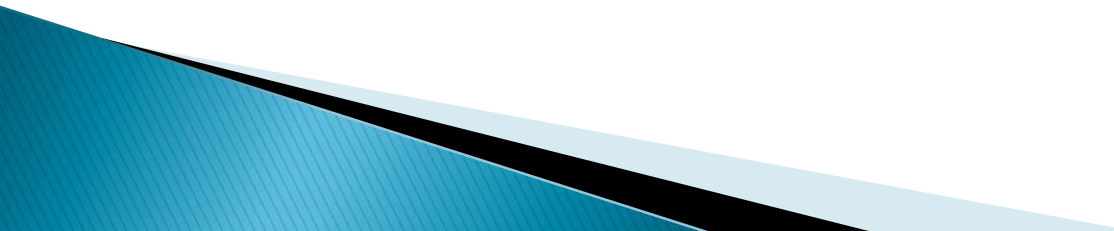
Pradaxa (Dabigatran)

- ▶ Pradaxa is in a class of medications known as a direct thrombin inhibitor
- ▶ Not a candidate for Pradaxa if
 - you are 75 years of age or older
 - History of kidney problems

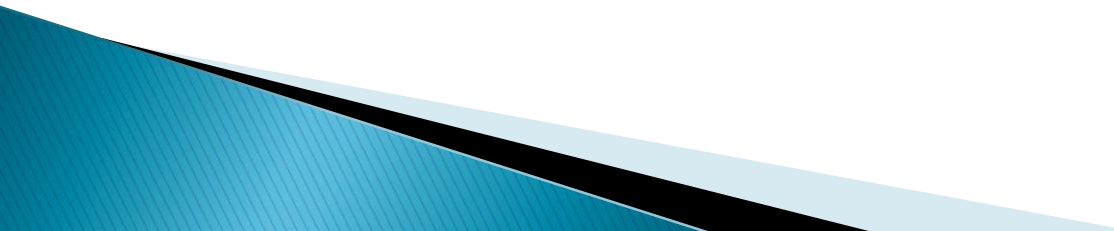
Xarelto (Rivaroxaban)

- ▶ Direct factor Xa inhibitor
 - ▶ Taken once a day with evening meal
 - ▶ Dose reduced based on kidney function
- 

Eliquis (Apixaban)

- ▶ Direct factor Xa inhibitor
 - ▶ Taken twice a day
 - ▶ Dose reduction if 2 of 3 are true:
 - Age more than 80
 - Weight less than 60 kg
 - Creatinine more than 1.5
- 

Savaysa (Edoxaban)

- ▶ Direct factor Xa inhibitor
 - ▶ Taken once a day
 - ▶ Dose adjusted for kidney function
- 

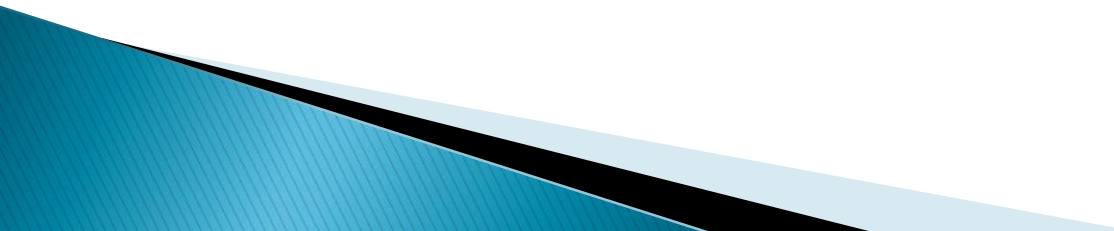
CHADS2

Condition	Points
CHF	1
Hypertension	1
Age \geq 75	1
Diabetes	1
Prior Stroke or TIA	2

Annual Stroke Risk

<u>CHADS2 Score</u>	<u>Stroke Risk %</u>	<u>95% CI</u>
0	1.9	1.2–3.0
1	2.8	2.0–3.8
2	4.0	3.1–5.1
3	5.9	4.6–7.3
4	8.5	6.3–11.1
5	12.5	8.2–17.5
6	18.2	10.5–27.4

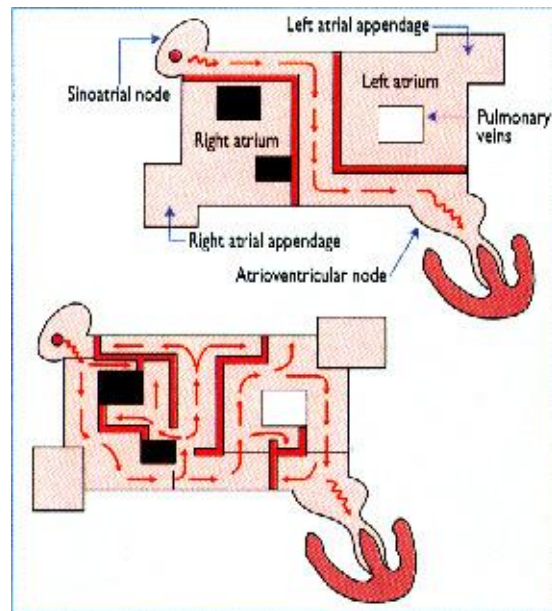
Rhythm Control

- ▶ Medications typically alter the electrical currents in the cardiac cells
 - ▶ Trying to prevent the rapid conduction needed for atrial fibrillation to occur
 - ▶ Anti-arrhythmics can become Pro-arrhythmics
- 

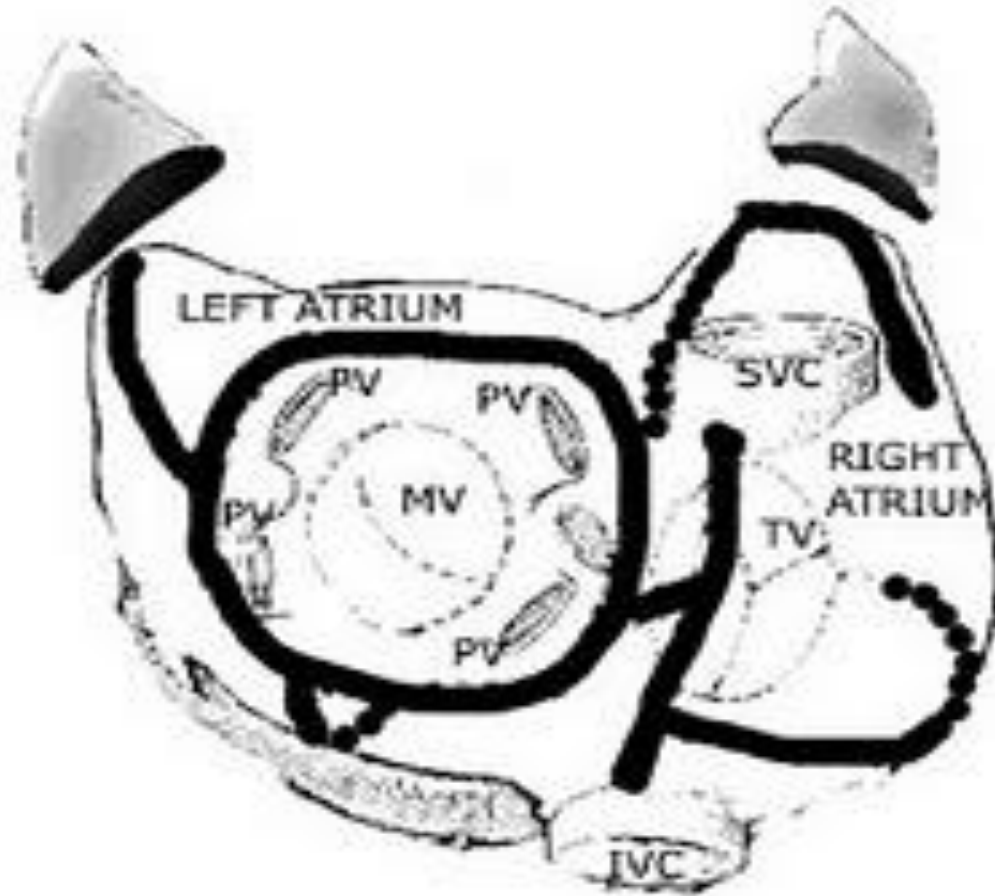
Rhythm Control

- ▶ There are several types of rhythm control medications, including:
 - procainamide (Pronestyl)
 - disopyramide (Norpace)
 - flecainide acetate (Tambocor)
 - propafenone (Rythmol)
 - sotalol (Betapace)
 - dofetilide (Tikosyn)
 - amiodarone (Cordarone)

Maze Procedure

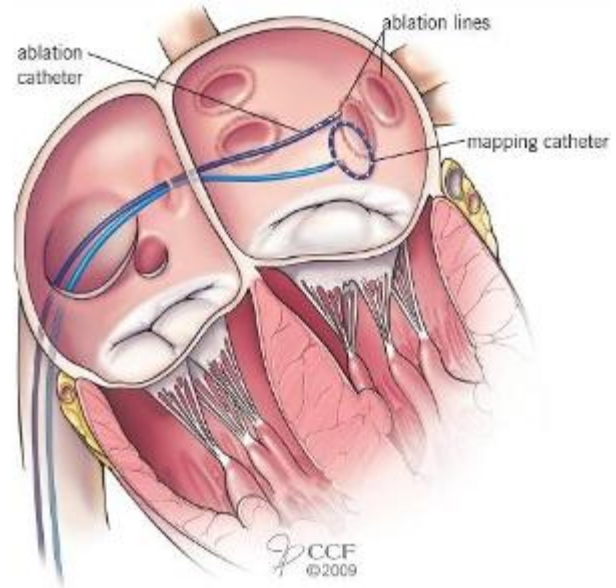


Maze Procedure



Success Rate

- ▶ Present Modified Maze procedure
 - Greater than 90% success rate after 5 years
 - Studies varied depending on procedure type with results of 88 to 91% after 12 months



Catheter Ablation Success Rates

- ▶ Define success
 - With or without continued medication
- ▶ Type of atrial fibrillation Paroxysmal vs. persistent
- ▶ Initial multicenter data (2005)
 - 1995 – 2002
 - 52%
- ▶ Second survey (2003 – 2006)
 - 70% without drugs and symptom free

Catheter ablation

- ▶ Now a standard definition of success
 - Freedom from atrial fibrillation, atrial flutter and atrial tachycardia
 - No antiarrhythmic drugs
 - Followed for 12 months
 - Holter monitoring
- ▶ Blanking period of 3 months
- ▶ Voluntary use
- ▶ 80 to 85% success rates are quoted

