

Mission Statement for our Arrhythmia Care

- We are dedicated to provide a compassionate and an outstanding care for patients with cardiac arrhythmias.
- We will be utilizing the cutting edge and the most advanced technology to provide a great success for treating arrhythmias.

What is Cardiac Electrophysiology?

- It is the cardiology sub-specialty in which we diagnose and treat patients with heart arrhythmias (both medically and with procedures).

Procedures we provide in Electrophysiology

- Device implantations and evaluation, exp. Pacemaker, defibrillators, cardiac resynchronization pacemakers.
- Device and leads extraction.
- Electrophysiologic testing.
- Catheter ablation
 - Atrial fibrillation, flutter, atrial tachycardias.
 - Supraventricular and ventricular tachycardias

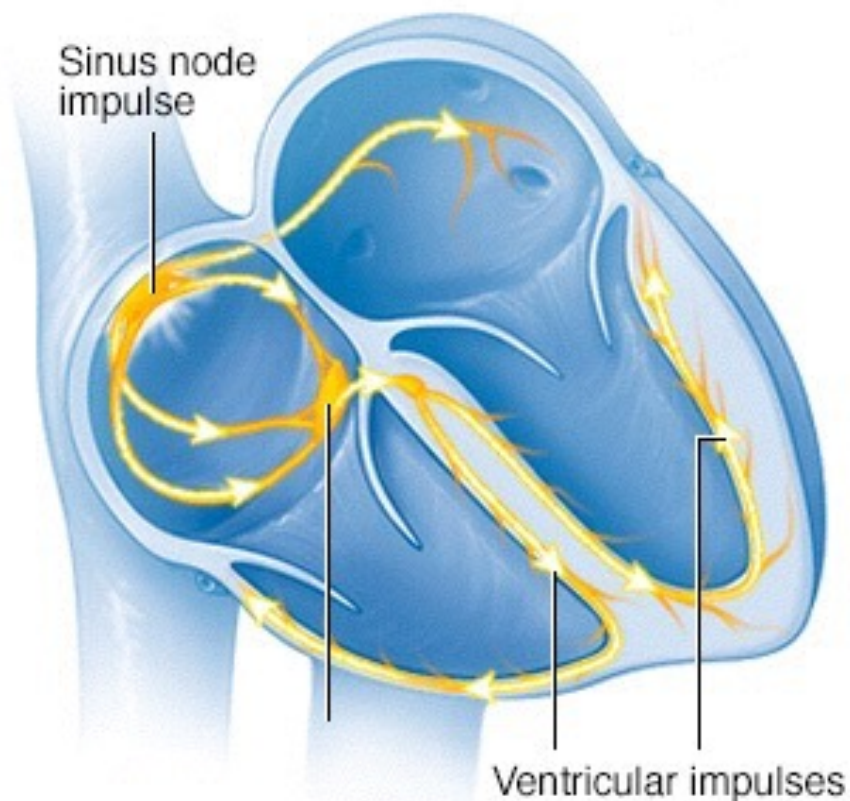
Outline

- What is Atrial Fibrillation?
- How common is AF?
- What are the risk factors?
- What would you feel when you are in Afib?
- How do we treat it?

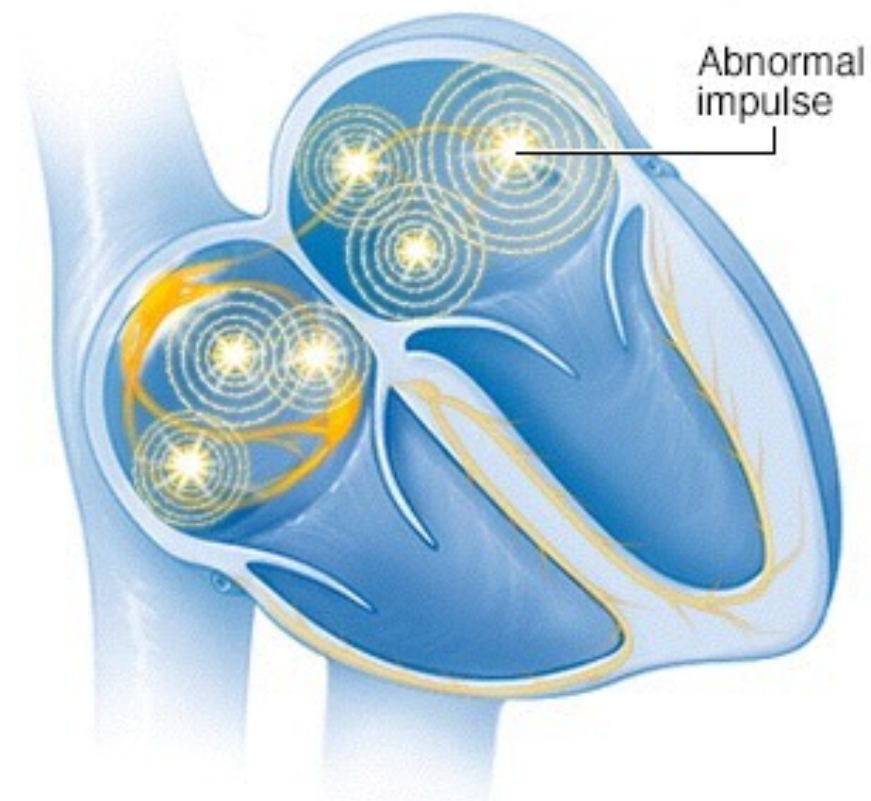
What is Atrial Fibrillation?

Very fast Electrical activities swirling around the the top chambers, at a 300-500 rounds per minute which make the the atria “quiver”

Normal heart rhythm



Atrial fibrillation (AFib)



What causes Atrial Fibrillation?

● Risk Factors:

- Heart disease: heart failure, coronary artery disease, Valvular heart disease.
- Cardiothoracic surgeries
- Hyperthyroidism
- Hypertension, Diabetes.
- Smoking
- Obesity
- Obstructive sleep apnea.
- familial
- Age

What causes Atrial Fibrillation?

- **Precipitating Factors:**
 - Stress
 - Exhaustion, lack of sleep
 - Caffeine
 - Alcohol
 - Volume depletion
 - Infection

How do you know you have atrial Fibrillation?

Here are some of the symptoms you may have:

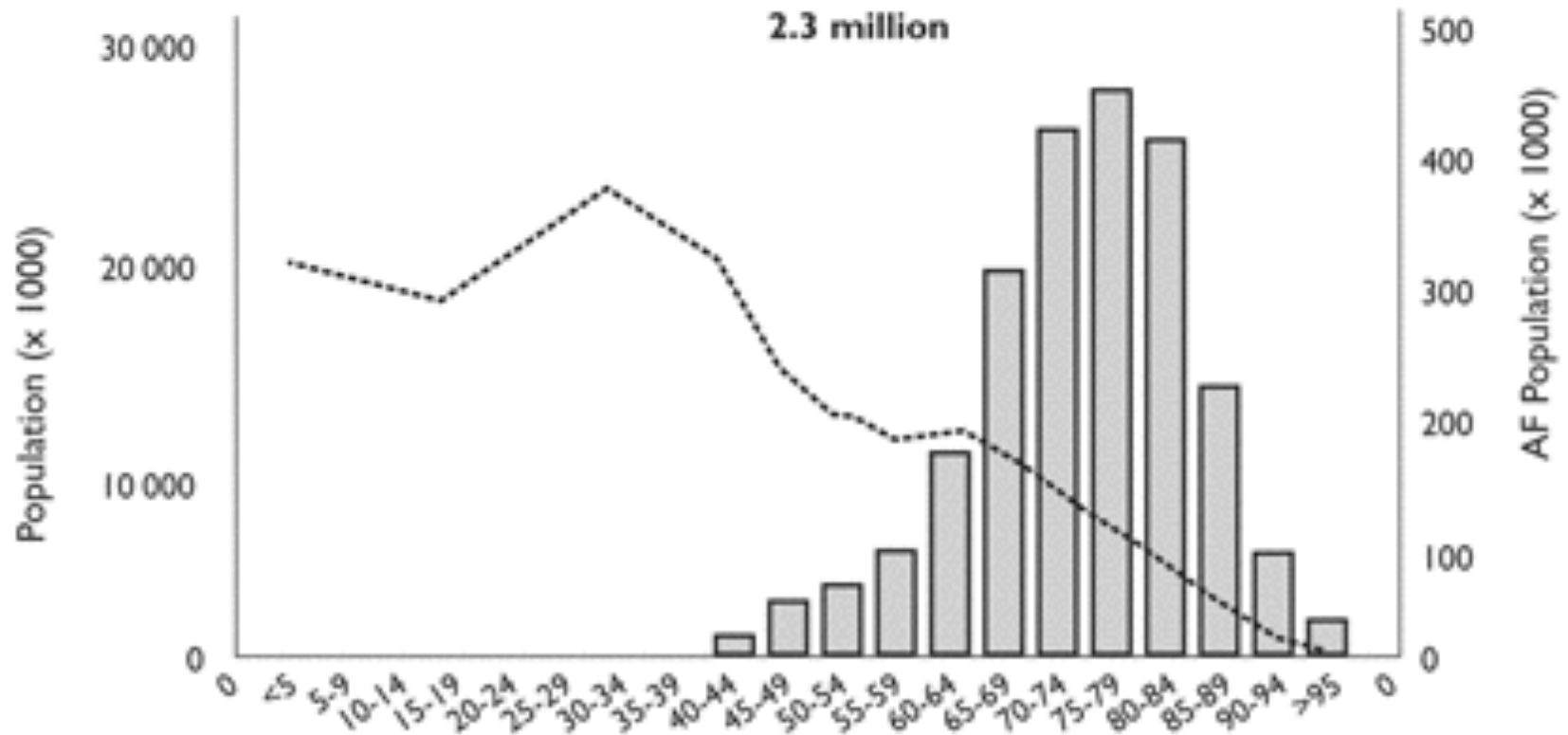
- Heart palpitations or rapid jumping inside the chest.
- Irregular and rapid heartbeat
- Dizziness, Fainting (syncope)
- chest pain or pressure
- Shortness of breath
- Fatigue, Tiring more easily when exercising
- **Silent**

Epidemiology of Atrial Fibrillation

- The most common rhythm disorder of the heart.
- It affect 2-3 million Americans and growing.
- It is estimated to affect 5 millions in 2020 and 12 millions in 2050
- It occurs in <1% of individuals < 60 years, but in approximately 6% of those >65 years, and in **>10% of those >80 years.**
- Male have a higher risk of developing AF but female have a higher risk of stroke.

Atrial Fibrillation and Age

Figure 1. Atrial Fibrillation (AF): An Age-Related Stroke Risk Factor



Source: Feinberg WM, et al. *Arch Intern Med.* 1995;155:469-473.

Is Atrial Fibrillation Dangerous?

- Can lead to Congestive heart failure
- Increased risk of Stroke (5-7 fold increase risk of stroke)
- 2 fold increase risks of dying
- Increased risk of Hospitalizations

How do we treat Atrial Fibrillation?

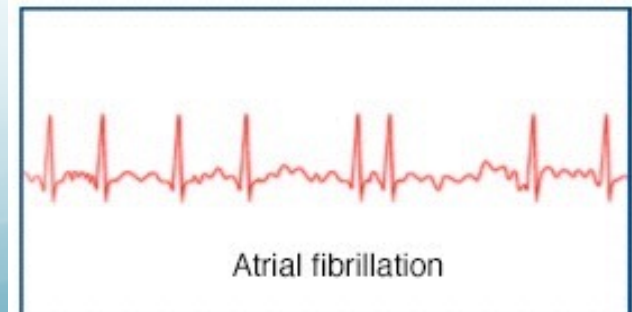
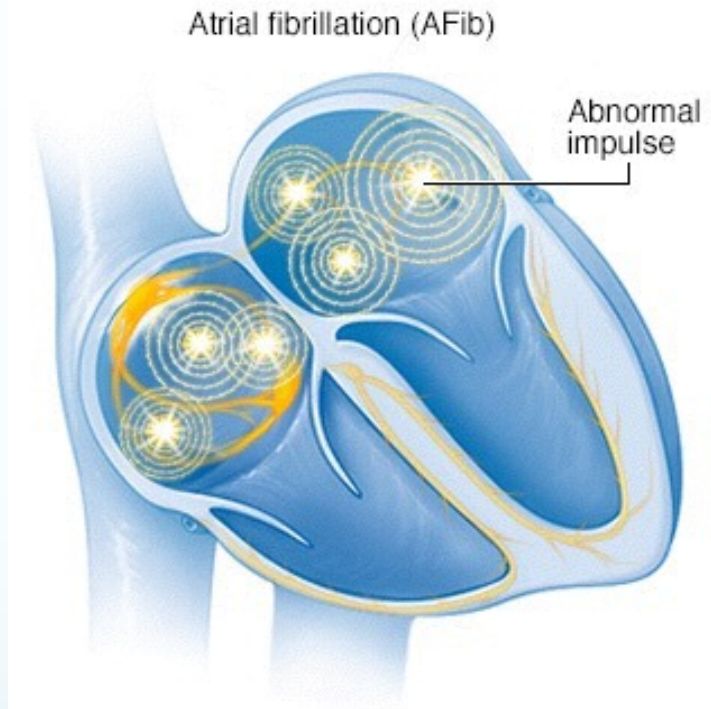
- **Rate control therapies**
- **Stroke Prevention**
- **Rhythm control therapies**
- **Modify the risk factors**

Modify the risk factors

- Weight reduction
- Exercise
- Treat hypertension, Diabetes, and other heart disease
- Treat sleep apnea
- Avoid caffeine, alcohol

Rate control therapy

- Beta Blockers: Metoprolol, atenolol.
- Calcium Channel blockers: Cardizem, Verapamil
- Digoxin

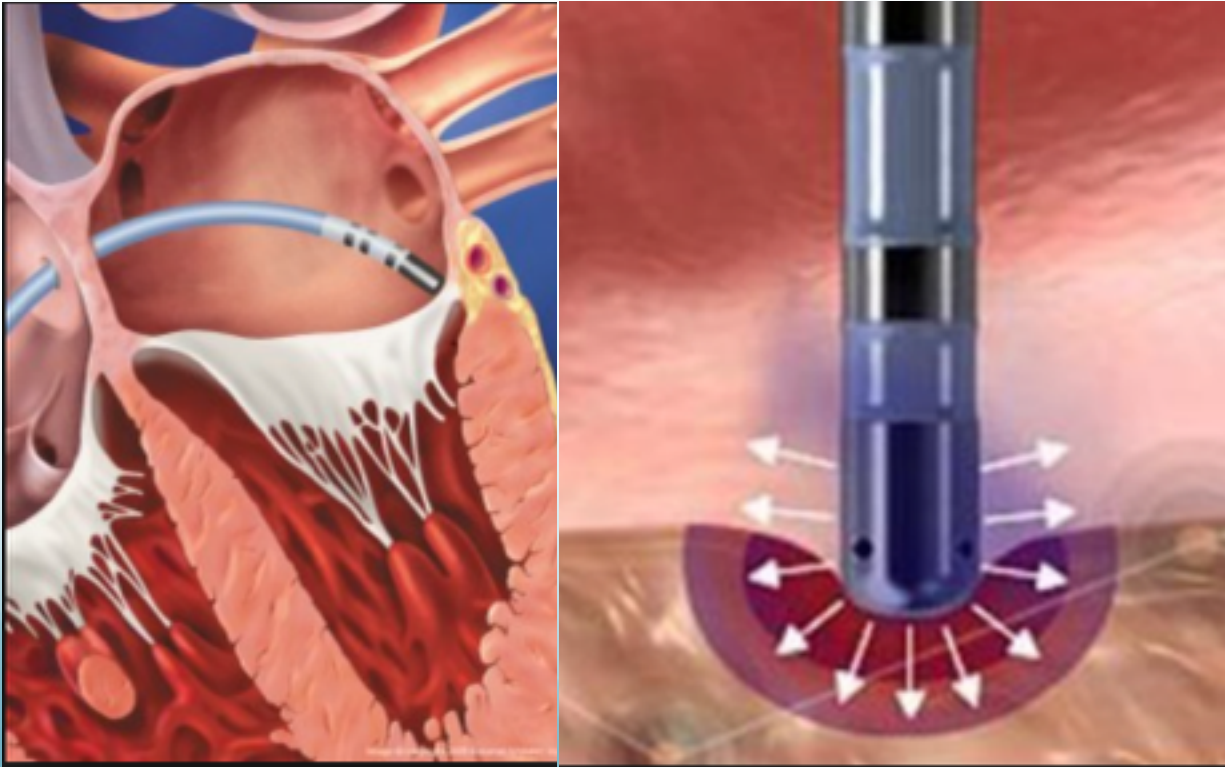


Rhythm control therapies

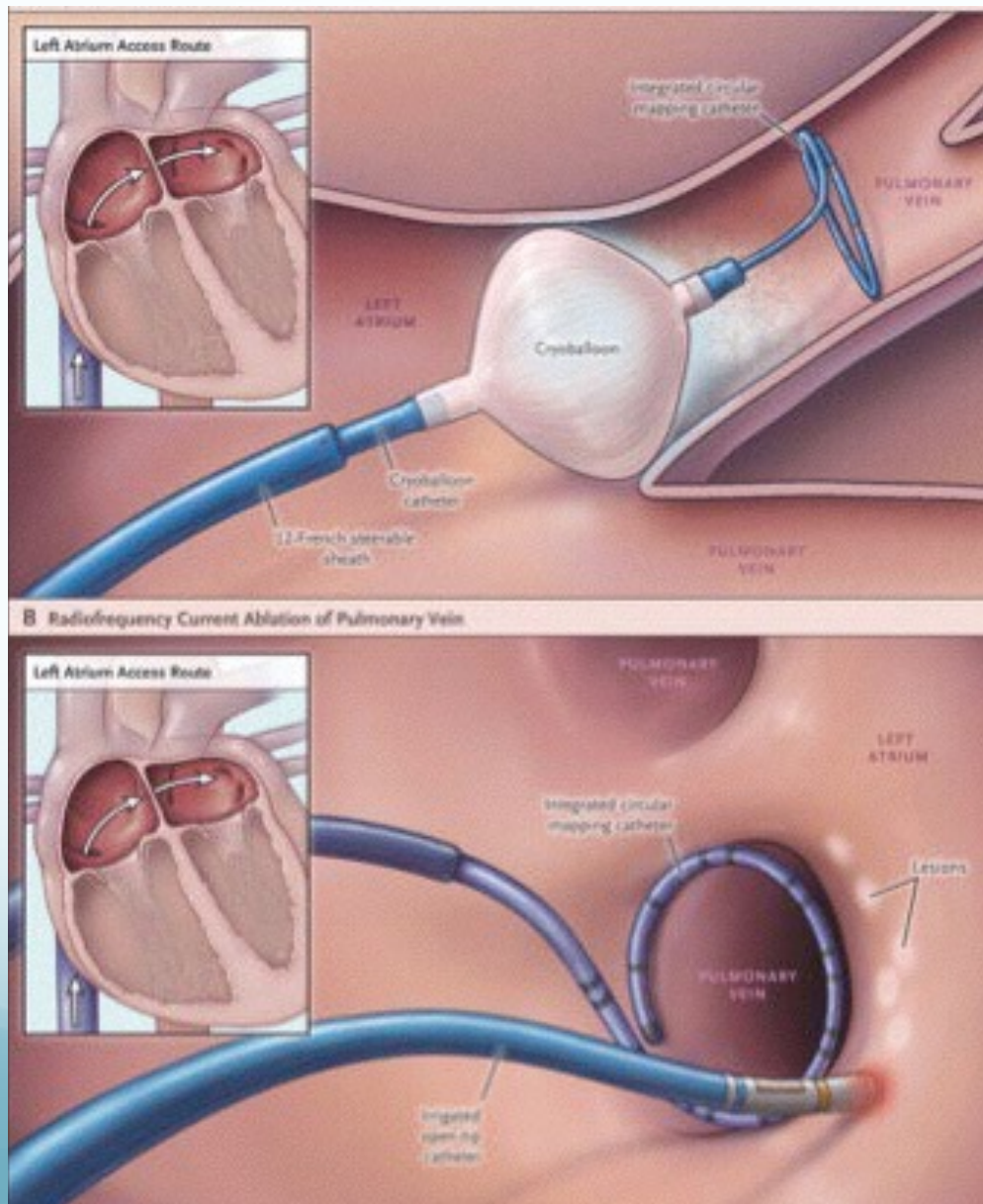
- Anti-arrhythmic Medications.
- Catheter Ablation.

Catheter Ablation of Atrial Fibrillation

- Catheters are “small plastic tubes” that are inserted into the body/heart.
- Ablation: the killing of islands of heart muscle cells to treat heart rhythm problems.



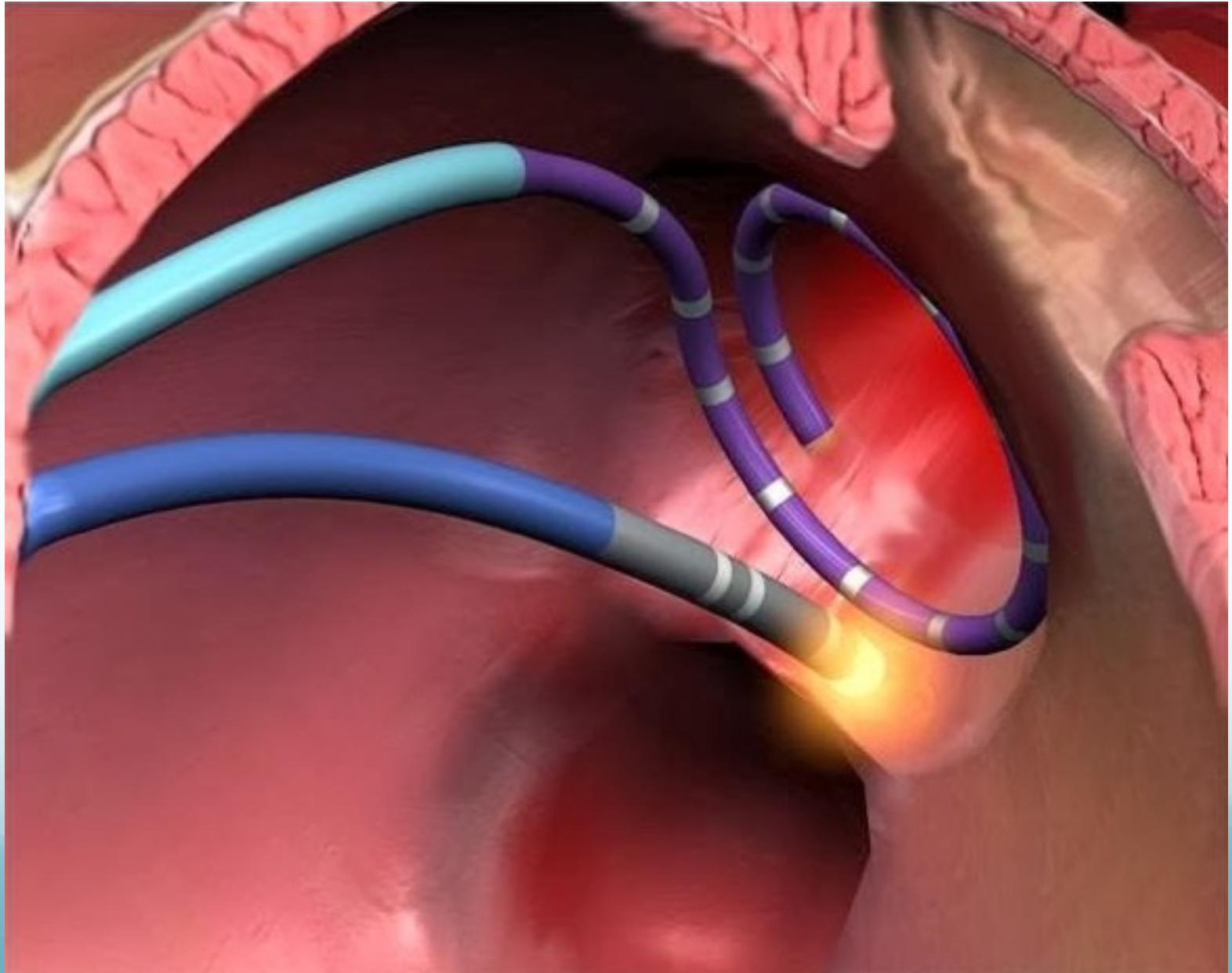
Energy sources of Catheter Ablation of Atrial Fibrillation



**Cryoablation
(freezing)**

**Radiofrequency Ablation
(heating)**

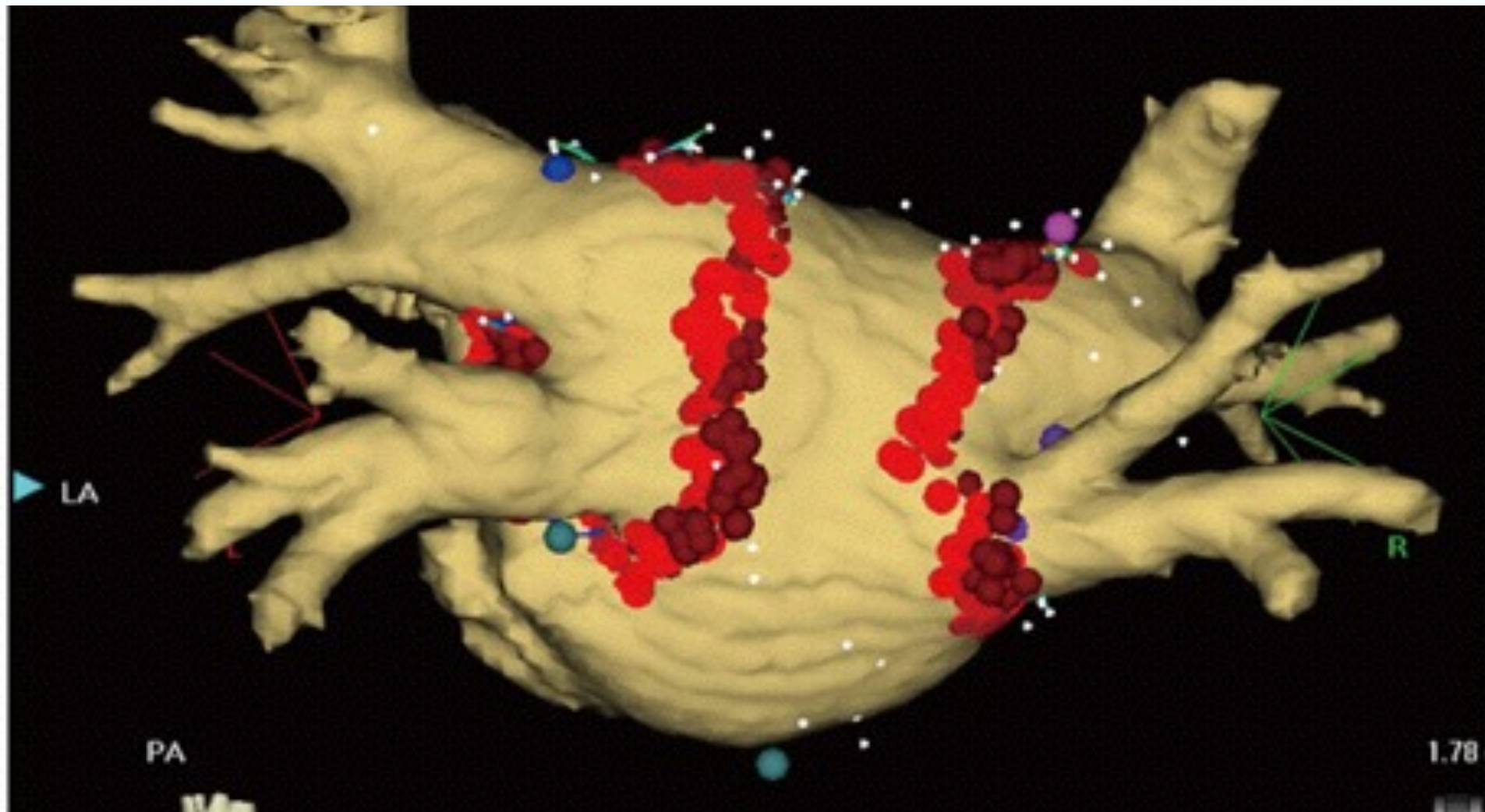
Radiofrequency Ablation



Catheter Ablation of Atrial Fibrillation

<https://youtu.be/ZGB2hAQZA9U>

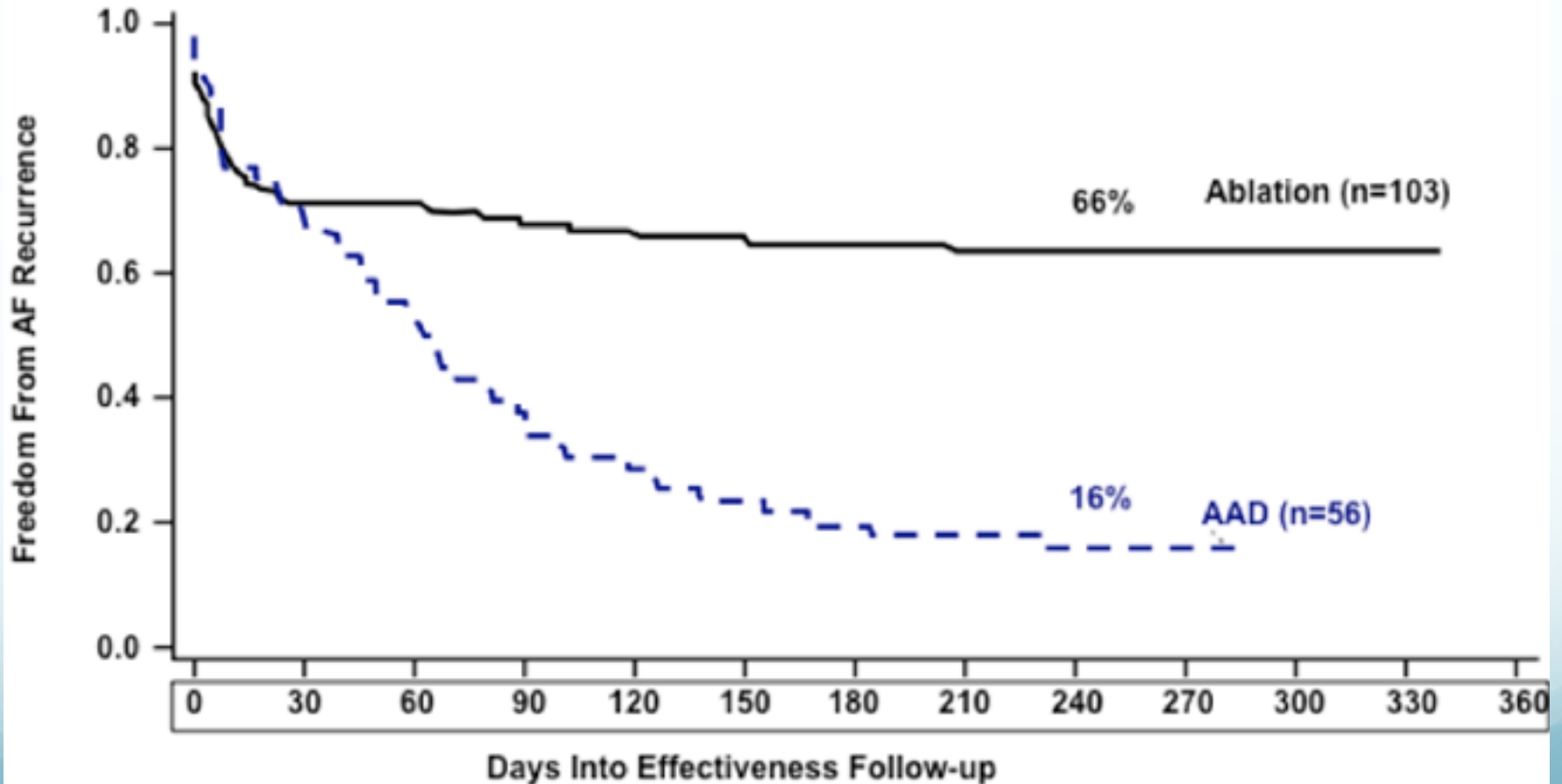
Catheter Ablation of Atrial Fibrillation



The Rule of Catheter Ablation of Atrial Fibrillation

- Catheter ablation of Afib is indicated if patient remains symptomatic despite medical therapy or if patient does not want to be on medical therapies for life.

Efficacy of Catheter Ablation of Atrial Fibrillation



High benefits to risk ratio of Catheter Ablation of Atrial Fibrillation

- Catheter ablation of AFib provide up to 70% success and freedom from Afib with relative low procedure risks.

Stroke Prevention with Watchman Device

<https://youtu.be/f0vskAz2uTo>

Watchman left atrial appendage occluder device

