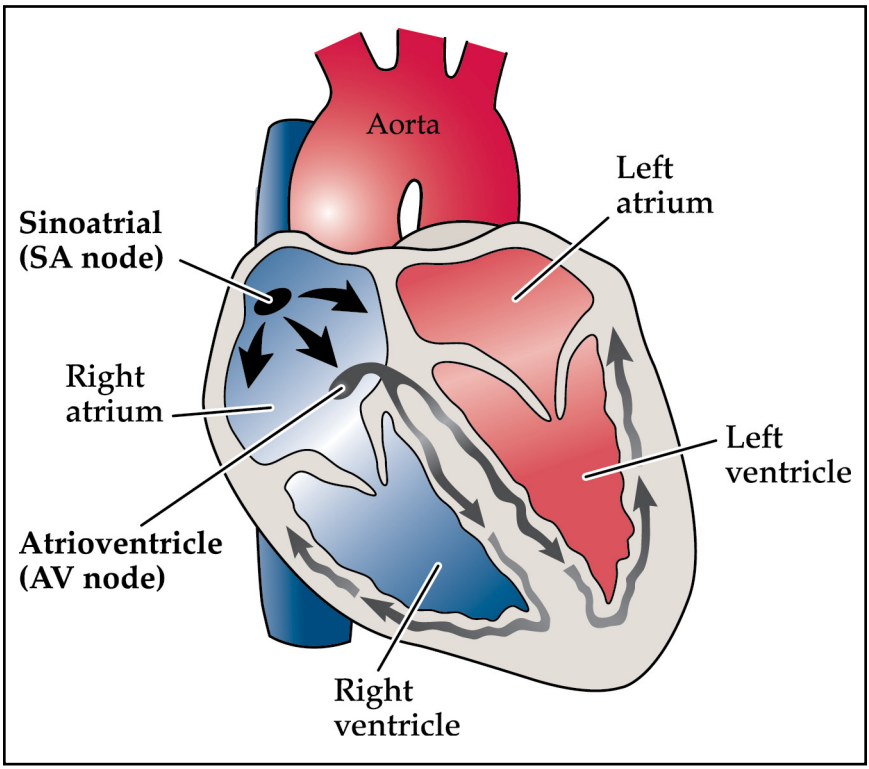
PATIENT EDUCATION

Catheter Ablation

Allina Health



Your heart has four chambers. Two upper chambers (atria) pump blood to the two lower chambers (ventricles). In order for the heart to pump, it requires an electrical impulse to start a heartbeat. Each heartbeat starts in the sinoatrial (SA) node. This impulse travels through the atria and is received by the atrioventricular (AV) node.

The AV node acts as a relay center to delay the impulse before sending it from the atria to the ventricles.

Catheter Ablation

A catheter ablation is a procedure done to modify or eliminate certain types of heart rhythm problems.

Your Heart's Electrical System

Your heart has four chambers. Two upper chambers (atria) pump blood to the two lower chambers (ventricles). In order for the heart to pump, it requires an electrical impulse to start a heartbeat.

Each heartbeat originates from the sinoatrial (SA) node — the heart's natural pacemaker — which is located in the upper right atrium. This impulse travels through the atria, signaling them to contract. The impulse is then received by the atrioventricular (AV) node.

The AV node acts as a relay center to delay the impulse before sending it from the atria to the ventricles. The impulse then spreads throughout the muscle of the ventricles, stimulating them to contract.

Sometimes the heart will beat slower than 60 bpm (called bradycardia) or faster than 100 bpm (called tachycardia). Tachycardia that starts in the upper chambers of the heart is called supraventricular tachycardia.

Heartbeats that are too slow or too fast may cause fainting, fatigue, palpitations (fluttering in the chest), shortness of breath, chest pain or pressure.

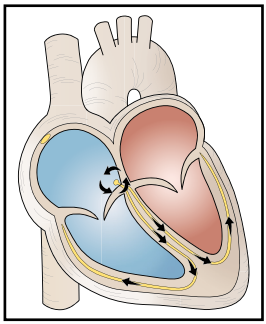
Abnormal Heart Rhythms

There are different types of abnormal heart rhythms. Your doctor or nurse will point out your specific abnormal heart rhythm from the options below.

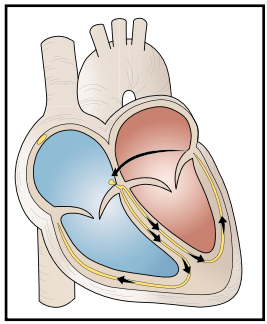
❒ **Supraventricular tachycardia**:

— Abnormal rapid beating of your heart starts in your atria. The rapid impulses are sent to the ventricles.

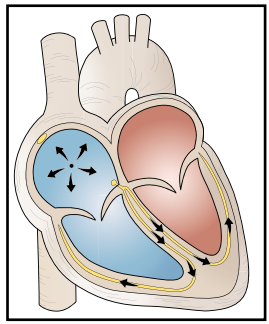
— These are the three most common types:



AV nodal reentrant tachycardia (AVNRT): the AV node sends signals to the lower atrial channel.



Atrioventricular reentrant tachycardia: extra signals travel between the atria and ventricles.



Atrial tachycardia: abnormal cells in one atrium send out rapid signals.

❒ **Sinus tachycardia**

— This is a rapid rhythm caused by normal impulses that are sent too quickly. It needs to be treated if it occurs at the wrong time or if it is exaggerated.

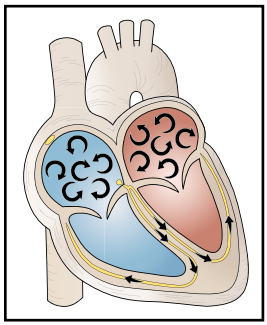
❒ **Atrial fibrillation**:

— This is a chaotic rhythm that starts in the upper chambers of your heart. The atria quiver (fibrillate), causing the ventricles to receive erratic impulses from the atria. The atria contract in an irregular and uneven pattern.

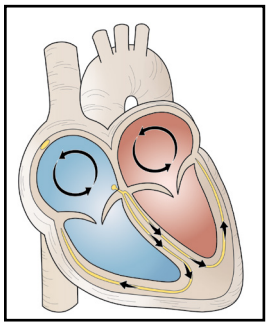
❒ **Atrial flutter**:

— Impulses that go from the atria to the ventricles have too many unorganized signals.

— You may feel like you have a fast heartbeat or feel a fluttering or racing in your chest.



Atrial fibrillation: the ventricles receive erratic impulses from the atria and contract in an irregular pattern.

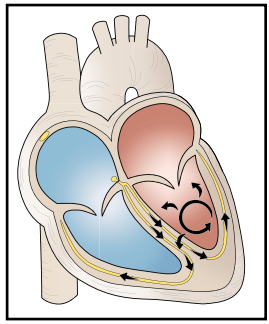


Atrial flutter: the atria send too many unorganized signals to the ventricles.

❒ **Ventricular tachycardia**:

— This is a rapid, regular beating of your heart ventricles.

— The impulses can come from an area of your heart damaged by a heart attack or happen in a normal heart. Symptoms range from annoying to life-threatening.



Ventricular tachycardia is a rapid, regular beating of your heart ventricles.

❒ **Premature ventricular contractions**:

— These are early beats that start from within the lower chambers of your heart.

— If these happen too often, they can cause symptoms such as palpitations, fatigue (being very tired), shortness of breath, or feeling lightheaded or faint. If the early beats happen a lot, they can weaken your heart muscle.

Ablation

Ablation is a procedure that can treat abnormal heart rhythms.

It uses a special catheter to deliver high-frequency (hot) or freezing energy to destroy a portion(s) of heart tissue that causes the arrhythmia.

The goal of ablation is to change or get rid of the abnormal electrical impulses so the electricity can follow the normal electrical path.

❒ **Supraventricular tachycardia**

— Ablation involves changing the abnormal area so it can't send any more abnormal signals.

— Ablation may be done in more than one area.

— After ablation, you may still feel rapid heartbeats that last a short time. These feelings should go away in the first few months after the procedure.

— Your doctor may give you directions to stop taking certain medicines before the procedure or give you directions to take medicine to control your heart rate.

❒ **Sinus tachycardia or sinus node modification**

— Ablation involves changing the sinus node to slow the electrical impulses.

— Your doctor will talk with you if other treatment is needed (such as a pacemaker).

❒ **Atrial fibrillation**

— Ablation is usually done in several locations in the left and right atria.

— Much of the work will be done in the left atrium around the veins that carry blood to the heart from the lungs. This is the area where many of the abnormal electrical signals trigger the atrial fibrillation.

— For a few months after the procedure, you may still have episodes of atrial fibrillation.

— Your doctor may give you directions to stop taking certain medicines before your procedure.

— Your doctor will talk with you if other treatment is needed.

— You may need to have ablation again in the future.

— Your doctor may prescribe blood-thinning medicine for you after the procedure.

❒ **Atrial flutter**

— Ablation will be done once your doctor finds the spot of the flutter. It can be in the left or right atrium.

— Ablation for atrial flutter may be done along with the ablation done for atrial fibrillation.

— Your doctor may give you special directions to follow before the procedure.

— Your doctor will give you directions to take blood-thinning medicine after the procedure.

❒ **Ventricular tachycardia**

— The beats may be coming from more than one area on the inside of your heart or from the outer surface of your heart. Ablation may be done from the inside of your heart or by inserting a catheter into the sac around your heart from the outside of the chest.

— After ablation, you may or may not have any more symptoms.

— Your doctor will give you special directions to follow before and after the procedure.

— You may need to have ablation again in the future, especially if the impulses are coming from several areas.

❒ **Premature ventricular contractions**

Ablation may help you if these early beats happen very often or if they are causing your heart muscle to become weak.

— The beats may be coming from more than one area on the inside of your heart or from the outer surface of your heart. Ablation may be done from the inside of your heart or by inserting a catheter into the sac around your heart from the outside of the chest.

— After ablation, your symptoms may go away or they may happen a lot less often.

— Your doctor will give you special directions to follow before and after the procedure.

— You may need to have ablation again one day if your symptoms become worse. If you heart had become weak, it may take many months for your heart to return to normal.

Before the Procedure

- You may need to have special imaging studies (such as an echocardiogram, CT scan or MRI).
- Your doctor will give you directions about which medicines you can take the day of the procedure.
  - — If you take blood-thinning medicine or medicine to control your heart rate or rhythm, your doctor will give you directions.
- Your doctor will tell you when to stop eating and drinking before the procedure.
- You will have an IV (intravenous) line placed in your arm so you can receive medicines during your procedure.

During the Procedure

- You will be helped into position on the table in the Electrophysiology Lab. You will also be gently secured to the table with soft restraints to help keep you safe.
- Your nurse will connect you to many monitors.
- He or she will prep the skin over the catheter sites and put a sterile drape over the sites.
- You may receive a medicine to make you feel drowsy.
- The electrophysiologist will numb the skin over the catheter insertion sites. If you have any discomfort, tell the nurse.
- Small hollow tubes will be placed through the skin and into blood vessels in your groin, neck or both. The catheters are put into the small hollow tubes and guided to your heart using X-ray. You won't feel the catheters move into your heart.

- The procedure may take up to 4 hours or longer.
- You may receive a blood-thinning medicine called heparin through your IV (intravenous) line during the procedure. This will keep blood clots from forming on the catheters while they are inside your heart.

After the Procedure

- The catheters and small hollow tubes will be removed.
- To prevent bleeding, pressure will be applied to the sites for about 10 to 30 minutes in the procedure or recovery room.
- You will stay in bed for 2 to 5 hours with the head of the bed flat so the insertion sites don't bleed.
- Call your nurse if you feel warmth, pain or swelling at the catheter sites.
- You will be able to eat and drink. At the end of the bedrest time you may get up and walk.
- You may need to stay overnight at the hospital. If not, you will need to have someone drive you home.
- The nurse will take out your IV line before you go home.
- Follow the directions in your After Visit Summary.

Follow-up Appointments

- ❒ You may need a follow-up visit with your primary care provider.
- ❒ You will have a follow-up clinic visit with your cardiologist or electrophysiologist in a few months.

It is important to keep all follow-up appointments.

When To Call Your Doctor

Call your doctor if you have:

- swelling
- pain
- drainage at the catheter sites
- fever
- palpitations or other symptoms of fast or abnormal heart rhythms
- shortness of breath

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cvs-ah-25841 (11/13)