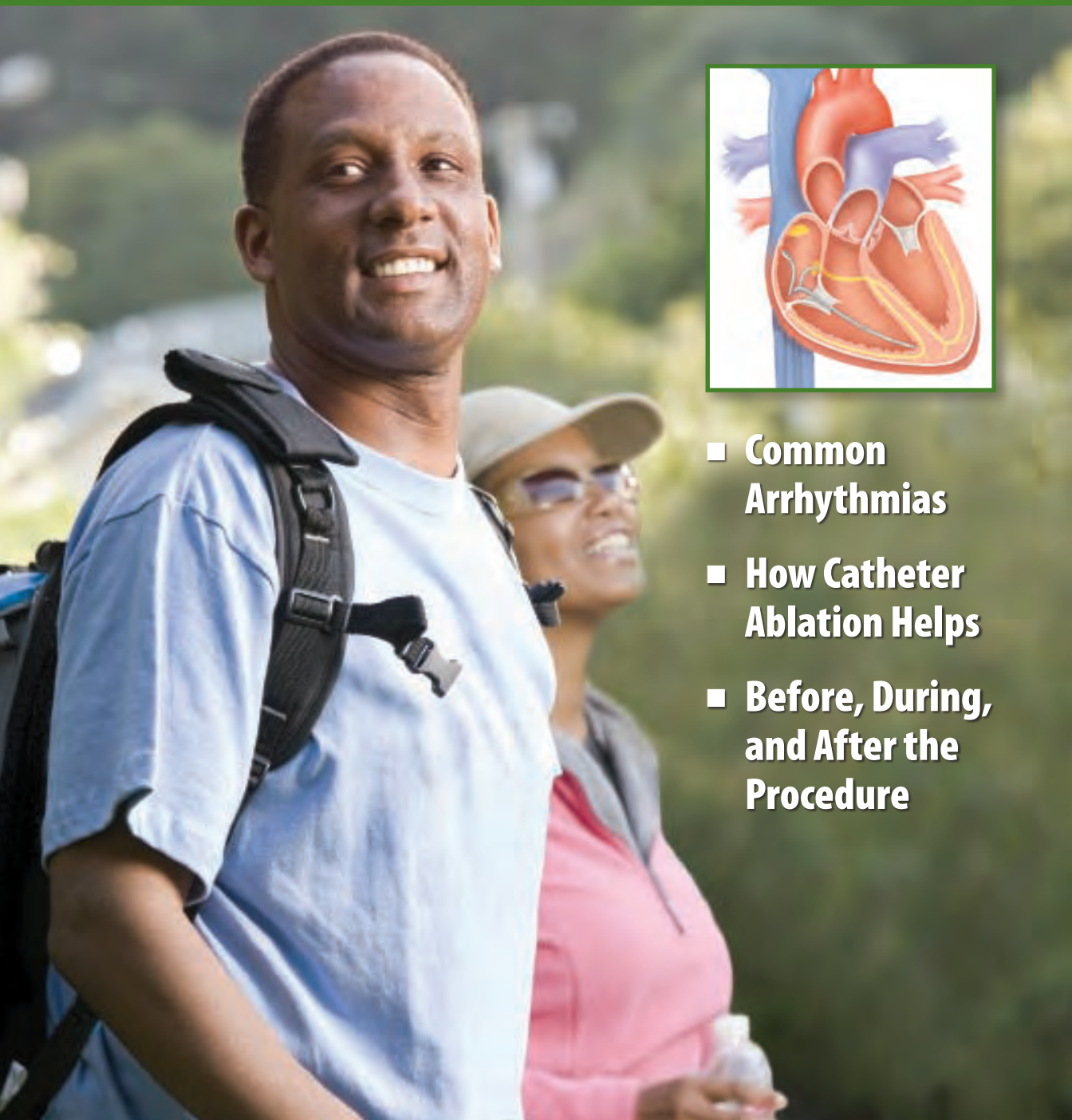
KRAMES
PATIENT EDUCATION

Understanding Catheter Ablation



- Common Arrhythmias
- How Catheter Ablation Helps
- Before, During, and After the Procedure

Problems with Your Heart Rhythm

An **arrhythmia** (heart rhythm problem) can make your heart beat too fast. The problem is often caused by cells in your heart that aren't working as they should. It may cause bothersome symptoms, such as an irregular heartbeat, dizziness, and shortness of breath. Your doctor has recommended **catheter ablation** to treat your arrhythmia. This procedure destroys the cells that are causing the problem. Read on to learn more.

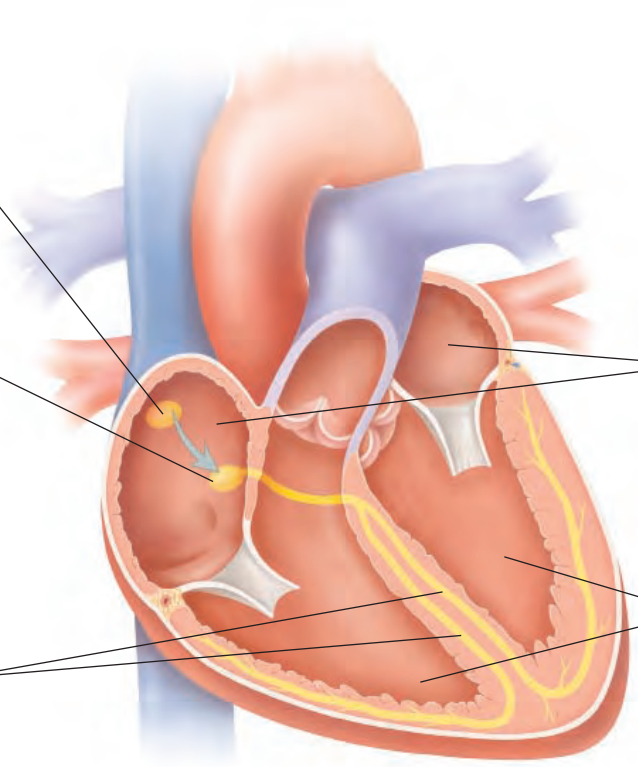
A Normal Heart Rhythm

The heart has an electrical system. This system sends out signals that control the heartbeat. Special cells in the heart create these signals. During each heartbeat, the signals travel through the heart's chambers. The signals tell the chambers when to contract (squeeze).

The **SA (sinus) node** starts each heartbeat. A signal from the SA node travels through the atria, telling them to contract.

The **AV node** coordinates the contractions of the atria and ventricles. To do this, it first receives the signal that has traveled from the SA node. It then sends this signal into the ventricles.

The **bundle branches** are pathways of cells that carry the signal to the ventricles. The signal tells the ventricles to contract.



The **atria** are the heart's upper chambers. Blood enters here. When the atria contract, blood is pumped into the ventricles.

The **ventricles** are the heart's lower chambers. They contract to pump blood out of the heart.

Fast Heart Rhythms

Problems with electrical signals can make the heart beat too fast. Some arrhythmias are caused by a **circuit** (signals going around and around in circles). Others occur when heart cells send out extra signals. You may have one of these common arrhythmias.

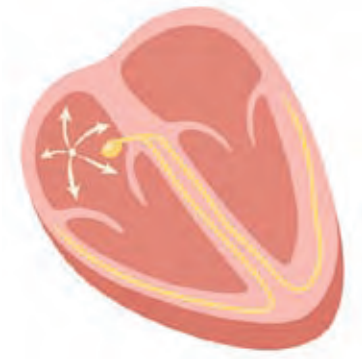
❑ AV Nodal Reentrant Tachycardia (AVNRT)

A circuit of electrical signals forms inside the AV node.

❑ Atrioventricular Reentrant Tachycardia (AVRT)

Extra signals can travel along an abnormal pathway between the atria and ventricles. This forms a circuit through the entire heart. This arrhythmia often occurs with Wolff-Parkinson-White (WPW) syndrome.

❑ Atrial Tachycardia

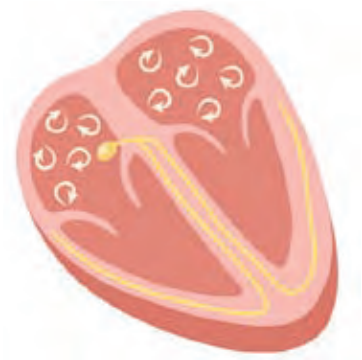


Abnormal cells in one of the atria send out rapid signals.

❑ Atrial Flutter

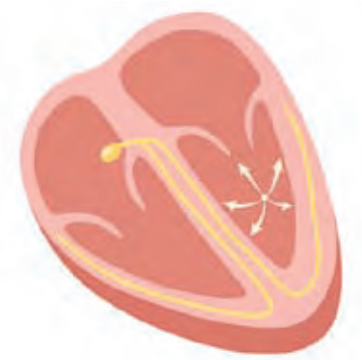
A circuit of electrical signals forms in one of the atria.

❑ Atrial Fibrillation



Many circuits of electrical signals form inside both atria.

❑ Ventricular Tachycardia



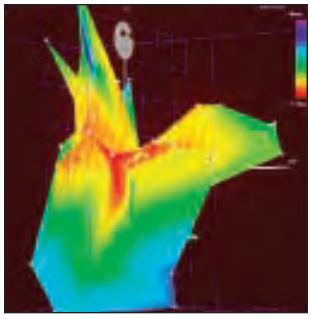
Abnormal cells in one of the ventricles send out rapid signals.

How Catheter Ablation Is Done

Catheter ablation is done by an **electrophysiologist** (specially trained heart doctor). The procedure uses thin, flexible wires called **electrode catheters.** These are inserted into a blood vessel in your groin or neck. Then, the catheters are gently passed to the heart. The doctor uses these catheters to find and **ablate** (destroy) problem cells.

The Heart's Signals Are Mapped

To find the problem, an **electrophysiology study (EPS)** is done. During this study, the doctor tries to induce (start) your arrhythmia. An electrical map of the heart is then created. This shows the type of arrhythmia you have and where the problem is. Using the map as a guide, the doctor knows where to ablate.

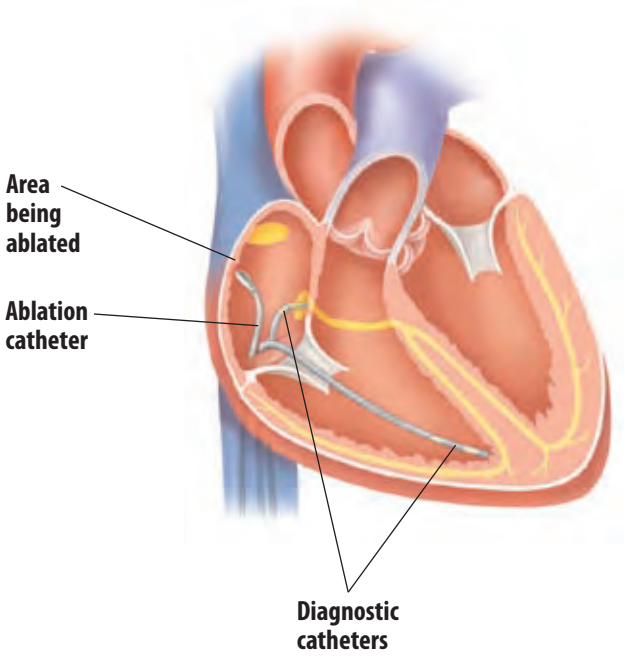


In this electrical map, the red area is where the arrhythmia starts. This is where ablation will be done.

Problem Areas Are Destroyed

Once the EPS shows where the problem is, an electrode catheter is moved to that area. Energy is sent through the catheter to destroy the problem cells. One or more of the following may be ablated:

- An extra pathway of electrical cells.
- Abnormal tissue that's triggering a fast rhythm.
- Part of the AV node.
- All of the AV node. If this is done, a permanent pacemaker will be implanted during the same procedure. This device takes over the AV node's job of coordinating contractions of the atria and ventricles.



The Heart's Rhythm Is Tested Again

After ablating the problem cells, the doctor tries to reinduce (restart) your arrhythmia. If a fast rhythm can't be induced, the ablation is a success. But if a fast rhythm does start again, further ablation may be needed.

Before the Procedure

Before your catheter ablation, you will meet with the electrophysiologist. He or she will tell you how to prepare for the procedure. You'll also discuss the risks and benefits of catheter ablation. If you have any questions, ask during this visit.

To Prepare for Catheter Ablation

You will likely be told to stop taking heart rhythm medications a few days before the procedure. Follow your doctor's instructions. Also, be sure to:

- Tell your doctor about all prescription and over-the-counter medications you take. This includes herbs, supplements, and vitamins. It also includes daily medications such as insulin or blood thinners. If you are allergic to any medications, tell your doctor.
- Have any routine tests, such as blood tests, as recommended.
- Not eat or drink anything after the midnight before the procedure, unless instructed otherwise by your doctor.

Risks and Complications

The risks of catheter ablation are fairly low compared to the benefits you receive. Possible risks and complications include:

- Bleeding or bruising
- Blood clots
- A slow heart rhythm (requiring a permanent pacemaker)
- Perforation of the heart muscle, blood vessel, or lung (may require an emergency procedure)
- Damage to a heart valve (rare)
- Stroke or heart attack (rare)
- Death (extremely rare)

What to Expect During Catheter Ablation

In most cases, catheter ablation is done in an electrophysiology (EP) lab. It often takes 2 to 4 hours, and sometimes longer. You'll receive medication to prevent pain. Medication will also help you relax or sleep during the procedure. If you feel uncomfortable during the procedure, tell the doctor or nurse.

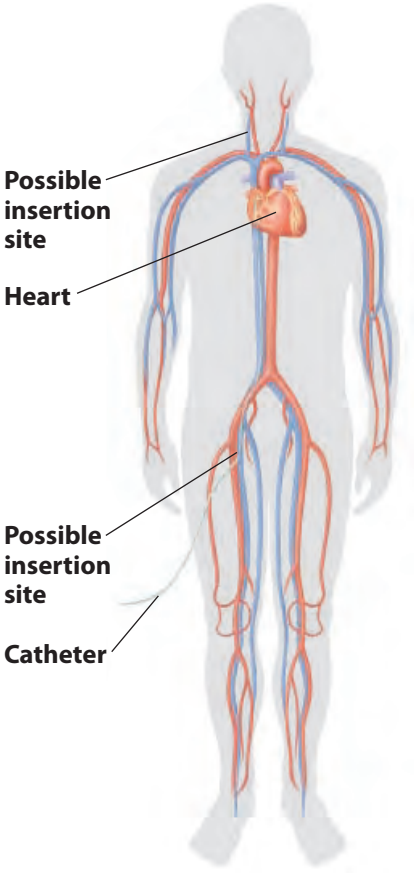
Getting Started

First, skin on your groin or neck is washed. The catheters will be inserted at one of these points. Any hair near the insertion site may be removed. An IV (intravenous) line is started in your arm. Medications and fluids are provided through this IV. To help keep the insertion site sterile (germ-free), your body is draped with sheets. Only the area where the catheters will be inserted is exposed.

Inserting the Catheters

The skin where the catheters will be inserted is numbed with a local anesthetic. This is so you won't feel pain. Then a small needle is used to make punctures in your vein or artery. Catheters are inserted through these punctures and guided to the heart with the help of x-ray monitors.

An electrode catheter



Finishing Up

When the procedure is finished, the catheters are taken out of your body. Pressure is applied to the puncture sites to help them close. No stitches are needed. You're then taken to a recovery room to rest.

After the Procedure

You may need to lie flat for 2 to 6 hours while the insertion sites close up. During this time, you'll be monitored by a nurse. You may go home later that day. Or, you may stay in the hospital overnight.

Going Home

When it's time to go home, have an adult family member or friend drive you. Most people can walk, climb stairs, and perform light activity soon after catheter ablation. You can most likely return to your full routine within a few days. But you may be told to avoid running, heavy lifting, and other strenuous activities for a short time.

Follow-Up

You'll have a follow-up visit to go over the results of your catheter ablation. Your healthcare provider will tell you if you can stop taking heart rhythm medications. In many cases, one ablation is enough to treat an arrhythmia. But sometimes the problem returns or another is found. If this happens, you may need a second catheter ablation. Tell your healthcare provider if you have any new or returning symptoms.

When to Call Your Doctor

After your procedure, call your doctor if you have:

- Increased bleeding, bruising, or pain at the insertion site
- Shortness of breath or chest pain
- Coldness, swelling, or numbness of the arm or leg near the insertion site
- A bruise or lump at the insertion site that is larger than a walnut
- A fever over 100°F (38.3°C)
- Symptoms of your arrhythmia

Moving Forward

When your arrhythmia is treated, you can feel more confident about your health. Then you can focus on being active and enjoying life.

After Catheter Ablation

In the first few weeks after catheter ablation, you may feel as if your heart is skipping beats. Or, your heartbeat may feel faster than normal. You may also think that your heart rhythm problem is about to return. These sensations are normal and usually go away with time. Talk to your health-care provider if you're concerned.

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