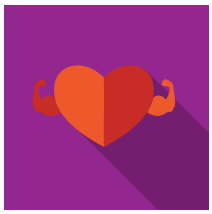
Hartford HealthCare

Heart & Vascular Institute

Do You Have an Abnormal Heart Rhythm?



When the electrical signals that control your heartbeat are delayed or blocked, maybe from malfunctioning nerve cells that produce the electrical signals, you're in the midst of an arrhythmia. This abnormal heart rhythm also can happen if your normal heartbeat is disrupted by electrical signals produced in other parts of the heart.

A healthy heart can experience an arrhythmia, but it also can be a sign of a more serious health problem.

The cardiac electrophysiologists at the Heart & Vascular Institute are specialists who test your heart's timing system with an electrophysiology study or, when needed, implant a pacemaker or defibrillator to maintain a natural heart rhythm. Our device clinics follow more than 1,400 patients with defibrillators using the latest in-home remote monitoring.

Some patients need a catheter ablation, a nonsurgical procedure that destroys, or ablates, tiny areas of the heart causing heart rhythm irregularities. An electrophysiologist inserts catheters — thin, flexible wires — into a vein, typically in the groin or neck, and guides them up to the heart.

We perform traditional radiofrequency (heat) ablations and newer cryoablation (extreme cold) procedures to eliminate abnormal electrical pathways in the heart. Complex ablation or robotics-assisted procedures requiring a tertiary care center are performed at the Heart & Vascular Institute's Atrial Fibrillation Center at Hartford Hospital.

If you are experiencing a heart rhythm disorder, and would like to see one of our experts, **REQUEST AN APPOINTMENT NOW.**

HartfordHealthCare.org/HeartConsult1 or call 833.203.9881.

You will hear back from our team within 2 business days.

How Do We Diagnose **Abnormal Heart Rhythms?**

A Heart & Vascular Institute cardiologist or electrophysiologist — a cardiologist who specializes in arrhythmias — begins the evaluation of your irregular heartbeat with an exam that might include:

- Checking the rate and rhythm of your heartbeat
- Checking your pulse
- Listening for a heart murmur
- Looking for signs of an enlarged heart or heart failure (such as swelling in the feet or legs)
- Looking for diseases that might be causing your symptoms

Tests

Your doctor might prescribe one or more of these tests:

- **EKG:** An electrocardiogram records the spikes and dips of your heart's electrical activity, typically with a device connected to a laptop that stores the results.
- **Holter monitor:** A device worn by the patient that records the heart's electrical signals for a much longer period, usually 24 or 48 hours.
- **Chest X-ray:** A simple X-ray can tell doctors if you have an enlarged heart.
- **Echocardiogram:** High-frequency sound waves create a picture of your heart using two-dimensional, three-dimensional and Doppler ultrasound technology.
- **Blood test:** Abnormal levels of potassium, thyroid hormone or other substances in the blood can indicate a heightened risk of an arrhythmia.
- **Stress test:** To evaluate how your heart works when beating fast, your doctor might recommend a stress test that includes monitoring during exercise. If you're unable to exercise, certain medicines can duplicate the effects on your heart.
- **Coronary angiography:** A technology that uses dye and special X-rays to reveal the interior of your coronary arteries.
- **Electrophysiology study:** In an EPS, a wire inserted through a vein into your groin or arm to the heart records the heart's electrical signals. This test is useful for doctors who wish to stimulate your heart to cause an arrhythmia, giving them insight into which medicines might help.

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Types of **Abnormal Heart Rhythms**

Bradycardia: A slower-than-normal heart rate. (Anything below 60 beats per minute.)

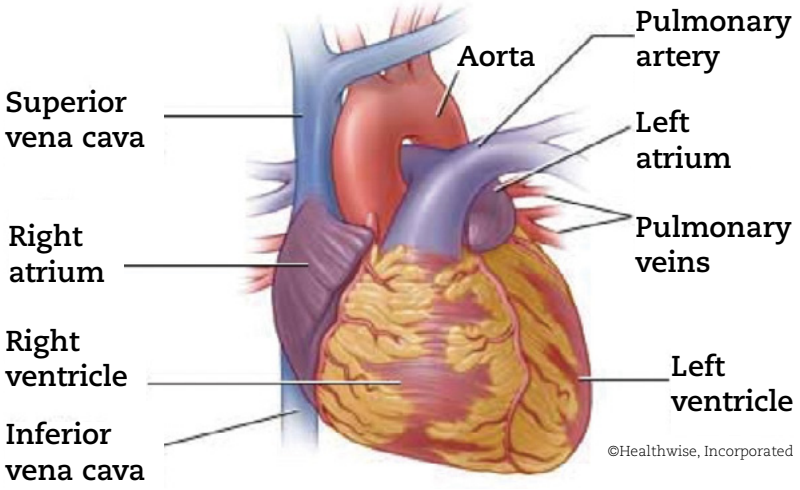
Tachycardia: A faster-than-normal heart rate. (Anything more than 100 beats per minute.)

Ventricular: Arrhythmias that begin in the heart's lower chambers, the ventricles.

Supraventricular: Arrhythmias that begin in the heart's upper chambers, the atria.

Some examples:

- **Atrial fibrillation:** The upper chambers of the heart contract abnormally because of an irregular heart rhythm.
- **Paroxysmal supraventricular tachycardia:** A rapid heart rate, with a regular heartbeat, that starts and ends suddenly.
- **Atrial flutter:** A misfiring in the right atrium that causes the atria to beat at close to 300 beats per minute as the ventricles, the heart's lower chamber, slow to anywhere from 75 to 150 beats per minute. People with heart disease, the elderly and patients in the first week following heart surgery are susceptible. Atrial flutter can evolve into atrial fibrillation.
- **Accessory pathway tachycardias:** A rapid heart rate caused by an abnormal electrical pathway between the atria and ventricles.
- **Premature atrial contractions:** Early extra beats, usually harmless. This is the most common type of arrhythmia: Researchers found that 99 percent of people age 50 or older in one study had at least one premature atrial contraction when monitored for 24 hours.
- **Bradyarrhythmias:** An adult's hear rate slower than 60 beats per minute qualifies as a bradyarrhythmia (in come cases, a slow heart rate is considered normal). A disease in the heart's walls that send signals to the heart muscle that makes it contract — also might be the cause.



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Treatment: *Medications*

Your doctor can prescribe medications like beta blockers or calcium blockers to reduce a fast heart rate. This type of medication, and digoxin, are useful in treating atrial fibrillation.

Patients with atrial fibrillation and other arrhythmias also can be treated with blood-thinning medications that reduce the risk of blood clots. Warfarin (Coumadin), dabigatran and heparin are among the possible recommendations.

Treatment: *Procedures*

- **Pacemaker:** A small device inserted beneath the skin in the chest or abdomen area. A pacemaker evaluates a heart's rhythm, then sends an electrical pulse to the heart when it senses an abnormality to restore a normal rhythm.
- **Implantable cardioverter defibrillator:** An implanted device, designed to prevent potentially deadly arrhythmias, that uses pulses or shocks to restore normal rhythms.
- **Maze:** Using small incisions, radio waves or other methods, a surgeon creates scar tissue that, because it does not conduct electrical activity, blocks arrhythmia-causing electrical signals. Maze, which requires open-heart surgery, is rare.
- **Catheter ablation:** When medication fails, this procedure can stop abnormal electrical rhythms or signals from affecting the heart by scarring tissue causing the problem. Electrodes placed in your heart measure the electrical activity, then target the tissue.
- **Electrodes** placed in your heart measure the electrical activity, then target the tissue with short, extreme bursts of energy. A catheter ablation uses radiofrequency energy, similar to microwave heat, to scar the heart and correct the arrhythmia.
- **Cryoablation**, the cryoballoon ablation procedure performed at Hartford Hospital, uses another temperature extreme — freezing technology that allows the catheter to stick to the tissue, increasing the catheter's stability. Cryotherapy can also produce a temporary electrical block through cooling, allowing the physician to gauge its effectiveness in a targeted area before scarring tissue permanently.

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