Common Arrhythmias

Living With Abnormal Heart Rhythms

- Premature Contractions
- PSVT
- Atrial Fibrillation
Abnormal Heart Rhythms Can Be Frightening

Your heartbeat is the strong, rhythmic motion that pumps blood through your body. A change in the pace or pattern of your heartbeat (arrhythmia) can be frightening. But most types of arrhythmia don’t place your health or life at risk.

You Can Still Live a Full Life

Abnormal heart rhythms occur in young and old alike. Having an arrhythmia won’t lead to a heart attack. In fact, many common arrhythmias don’t interfere with day-to-day life. After a few tests, you and your doctor will decide which treatment—if any—is right for you. Many people with arrhythmias live full lives without any treatment at all. And many arrhythmias occur in people with healthy hearts.

“I thought my tennis days were over.”

An arrhythmia doesn’t need to interfere with your physical activities.
“I was sure I’d need a pacemaker.”

Most of the arrhythmias needing treatment can be controlled with medication.

“I was afraid I wouldn’t live to see my granddaughter.”

Common arrhythmias are rarely life-threatening.
How a Normal Heart Works

Weighing just ounces, your heart is a hollow muscle. It endlessly contracts and relaxes to pump fuel to your body. This pumping action is triggered by electrical impulses that pass through your heart. Even between beats, your heart keeps working. It generates the electricity needed to produce the next beat. The pace and pattern of your heart’s electrical impulses can be recorded on an electrocardiogram (ECG or EKG).

Your Heart Is a Pump

Your heart has a right and a left side. Each side has an upper chamber (atrium) and a lower chamber (ventricle). The two upper chambers (atria) receive blood from the lungs and body. Then these chambers contract, helping to pump the blood into the lower chambers. Next, the lower chambers contract. They pump blood into your lungs and body.

An ECG is a test that records the electrical impulses from the heart. Each series of waves, from the P wave through the T wave, reflects the passage of one impulse through the upper and lower heart chambers.

The P wave shows the electrical stimulation of the atria.

The QRS complex shows the electrical stimulation of the ventricles.

The T wave shows the recharging (repolarizing) of the ventricles.
A Pump Run by Electricity

Each heartbeat starts as an electrical impulse. The impulse is released by a special group of cells (SA node). These cells, found in the right atrium, function as the heart’s natural pacemaker. The impulse travels through the atria and pauses at another special group of cells (AV node). The AV node funnels the impulse to the rest of the heart. Once it receives the impulse, the heart muscle contracts, causing a beat. After each beat, the muscle recharges. Then the cycle begins again—60 to 100 times a minute.

**Stimulating the Atria**

1. The SA node releases electrical impulses, setting the pace of the heart rhythm.
2. Each impulse travels a set path through the atria, causing them to contract.
3. The AV node acts as a circuit breaker. It slows the impulse or blocks impulses that are too closely spaced, giving the blood time to enter the ventricles.

**Stimulating the Ventricles**

1. The AV node funnels the impulse to the ventricles.
2. The atria recharge and begin to fill with blood.
3. The impulse travels a path through the ventricles, causing them to contract and pump blood into the lungs and body.

**Recharging the Ventricles**

1. The ventricles recharge and relax.
2. The ventricles begin to fill with blood.
Understanding Common Arrhythmias

There are many types of arrhythmias. Some are more severe than others. **Premature contractions** and **paroxysmal supraventricular tachycardia (PSVT)** often are not serious. **Atrial fibrillation**, though, may be more of a health risk—especially when linked with heart disease. Often a problem in the heart’s electrical system causes the arrhythmia. The arrhythmia, in turn, affects the heart’s pumping ability.

**How an Arrhythmia Happens**

Each type of arrhythmia happens in a different way. For instance, you may have:

- A premature contraction, where an impulse is released early outside of the SA node.
- PSVT, where an impulse that was released early reenters the atria by circling back through the AV node. Or the impulse may follow an abnormal route (bypass tract) through the heart.
- Atrial fibrillation, where many unorganized impulses are released quickly in the atria.

**The Effect on the Pump**

An arrhythmia affects your heart’s pumping by speeding up or slowing down the electrical impulses that make your heart beat. If an arrhythmia lasts longer than a few beats, the change in blood flow may cause symptoms. You may feel lightheaded, dizzy, or weak. You may also notice a racing feeling or irregular heartbeat in your chest (palpitations). This happens if the arrhythmia greatly increases the heart rate.
**PSVT:** The impulse may split at the AV node. Part may circle back into the atria and the rest may pass into the ventricles.

In some cases, the full impulse may travel a bypass tract through the heart.

**Atrial fibrillation:** Many impulses may be released at a rapid, unorganized rate.

**PSVT** greatly increases the heart rate. The heart has less time to fill between beats, so less blood is pumped through the heart and into your body.

**Atrial fibrillation** makes atrial contractions irregular and ineffective. Blood may pool and form a clot in the atria.

Blood clot
Diagnosing Common Arrhythmias

Each type of arrhythmia produces a specific abnormal heartbeat, which may cause a number of symptoms. To help diagnose your arrhythmia, your doctor will take a health history and examine you. You’ll be asked about your overall health and any symptoms you’ve noticed. An ECG will be done to provide a record of your heartbeat pattern. The ECG will record any abnormal impulses that pass through your heart during the test. As part of your exam, blood tests may also be done to check for certain medical problems.

Your Health History

Your doctor will ask you about your symptoms, your health history, and your family’s health history. You may be asked when your symptoms started, how often you notice them, how long they last, and what they feel like. You’ll also be asked if symptoms begin slowly or start and stop quickly. Tell your doctor if you have had heart or lung disease, high blood pressure, or thyroid problems. Any of these conditions can trigger an arrhythmia.

Your Physical Exam

During your physical exam, your doctor looks for an irregular heartbeat or any other signs of a heart problem. He or she will listen to your heart and take your pulse. Your doctor can tell if your heart is beating normally and if blood is passing through the atria and ventricles correctly. Arrhythmias may be linked with chronic high blood pressure (hypertension). So your blood pressure will also be taken during the exam.
ECG

If your doctor suspects you have an arrhythmia, you’ll have an ECG. During this simple test, electrodes are placed on your chest, shoulders, arms, and legs. They record any abnormality in your heart’s electrical impulses. An ECG takes just a few minutes and can be done in your doctor’s office. This test provides a brief snapshot of your heartbeat. If your routine ECG appears normal, further testing may be needed. Special variations of the ECG can monitor your heartbeat for a longer time or during physical activity. This makes it possible to record arrhythmias that occur less often.

The Holter monitor may be used if your routine ECG is normal but your symptoms occur often. This type of ECG uses a recorder to track your heartbeat for 24 hours. While wearing the monitor, you keep a record of your activities and symptoms. This record is then compared to the ECG results.

With the event recorder, you press a button to record your heart’s impulses every time you feel symptoms. This type of ECG can be worn long-term, making it easier to diagnose less frequent arrhythmias. Your ECG record can be transmitted by telephone to your doctor’s office.

A stress ECG may be done if your symptoms occur during physical activity. This test is performed while you exercise to record your heart’s response to different levels of stress (activity). Like the routine ECG, this test is often done in your doctor’s office.
Other Diagnostic Tests

Further diagnostic tests can provide information about how your heart works. An echocardiogram creates a moving picture of your heart. This picture helps your doctor learn whether your arrhythmia is linked to problems with the heart’s structure. An electrophysiology study (EPS) helps your doctor identify your type of arrhythmia. The study results help your doctor choose the best treatment for you.

Echocardiogram

An echocardiogram may be done to check your heart muscle or your valves (flaps of tissue that channel blood through your heart). An echocardiogram bounces harmless sound waves off the heart. The returning signals are converted into a moving image on a video screen.

Electrophysiology Study

During an EPS, areas of your skin are numbed. Then two or more electrical wires are inserted into blood vessels in your neck and leg. The wires are guided into your heart, where they record your heart’s impulses. Electrical signals may be sent to the heart, and special medications given to test your heart’s response. The results of the testing are recorded.

Taking Your Pulse

You may be asked to monitor your heartbeat by taking your pulse daily. You will be instructed how to do this.

To find your pulse, place two fingers on the underside of your wrist.
Reducing caffeine helps prevent premature contractions. Caffeine is most often found in coffee, certain soft drinks, tea, and chocolate.

Possible Symptoms
The time between a premature contraction and the next normal contraction may be longer than between two normal beats. This delay may feel like a “skipped” beat. After this pause in your heart’s rhythm, you may feel a thump in your chest. It may feel like your heart has flipped over. This symptom happens when the next normal beat pumps more blood than usual into your body.

Treatment Options
Premature contractions rarely require treatment. In many cases, a few lifestyle changes can return your heartbeat to normal. Getting enough sleep, reducing stress, and avoiding caffeine, tobacco, and alcohol can help prevent premature contractions. Occasionally, medications may be prescribed to help control the premature beats.

Your ECG
If you have premature contractions, the pattern of your heartbeat may look similar to the ECG below.
PSVT

Paroxysmal supraventricular tachycardia (PSVT) is a series of rapid atrial contractions. PSVT can greatly increase the heart rate. Although this can be a frightening feeling, it is often not serious. Your type of treatment may depend on how your heart’s electrical impulses reenter the atria. These impulses may return through the AV node or through a bypass tract.

Wolff-Parkinson-White syndrome (WPW)

With WPW, the heart’s impulses follow a bypass tract. Despite this, PSVT with bypass tract conditions can be treated.

Possible Symptoms

With PSVT, your heart suddenly begins beating very fast. The beats are rapid and regular, and may make you feel breathless, dizzy, or weak. You may also feel heaviness or pressure in your chest. The rapid heartbeat can last for seconds or go on for hours. Then, just as suddenly as it started, the arrhythmia will stop. Many people soon feel normal again.

Your ECG

If you have PSVT, the pattern of your heartbeat may look similar to the ECG below.
Treatment Options

PSVT sometimes can be controlled by a self-care technique that stimulates the link between your heart and brain. If your symptoms occur often or are severe, though, medical treatment may be needed. You may take medication. Or you may undergo catheter ablation, a procedure that stops impulses from circling back into the atria.

Vagal maneuvers

You may have mild or infrequent attacks of PSVT. If you do, special techniques called vagal maneuvers may slow your heart rate. These techniques work by exciting the body’s nervous system. When you perform vagal maneuvers, you help the SA node regain its role as the heart’s natural pacemaker. Talk to your doctor before trying vagal maneuvers.

Medication

Your doctor may prescribe medication if PSVT occurs often or if your symptoms interfere with your life. Medication may slow your heart rate and prevent PSVT from recurring. Antiarrhythmic drugs can be used alone or in combination. If PSVT persists, see your doctor.

Catheter ablation

In some cases, your doctor may recommend catheter ablation. Catheters (thin, flexible tubes) containing special wires are threaded into the heart. Then energy waves are released to destroy (ablate) problem cells in the atria, AV node, or bypass tract. This forces the heart’s impulses to take the normal conduction pathway. Ablation may provide lifelong treatment for PSVT and bypass conditions such as WPW.
**Atrial Fibrillation**

Atrial fibrillation is an ongoing series of rapid, uneven heartbeats. The atrial heart rate may soar. Then the atrial heart muscle begins to quiver (fibrillate) instead of contracting. By itself, atrial fibrillation is rarely serious. But atrial fibrillation combined with other problems can increase the risk of stroke or heart failure. As this arrhythmia can often be controlled, most people live full, normal lives.

**Atrial flutter**

In some cases, an impulse circles the atria and triggers atrial flutter. The heart beats quickly but evenly. Atrial flutter can lead to atrial fibrillation, and can also increase the risk of stroke or heart failure.

**Possible Symptoms**

Your first sign of atrial fibrillation may be a racing heart. You may also feel anxiety or a lingering tightness in your chest. You may feel tired and rundown or weak. Climbing only a short flight of steps may make you breathless or dizzy. You may also faint. Or, you may have no symptoms at all.

**Your ECG**

If you have atrial fibrillation, the pattern of your heartbeat may look similar to the ECG below.
Treatment Options
Medication is often the first step in treating both atrial fibrillation and atrial flutter. If medications don’t work for you, your doctor may suggest using electrical cardioversion to restore your heartbeat. Other medical procedures may be recommended if your problem recurs.

Medications
In most cases, medications are prescribed to slow the heart rate. These drugs may change your heartbeat back to normal.

- **Anticoagulants** help prevent blood clots. Anticoagulants may be used for a short time or long-term.
- **Antiarrhythmics** help maintain a normal heart rhythm. They may be prescribed after the abnormal heartbeat is converted back to normal by medications or electrical cardioversion.
- **AV node blocking medications** help control the heart rate by slowing electrical impulses in the heart.

**Electrical cardioversion**
If medications can’t convert your heart rhythm to normal, electrical cardioversion may help. This procedure uses a controlled electric shock to briefly stop all electrical activity in the heart. Then the SA node takes over and once again sets the pace of the heart. Before cardioversion, you may be given anticoagulants for several weeks. Just before the procedure, you will be sedated or anesthetized.

**Additional procedures**
Sometimes medication and electrical cardioversion can’t improve your condition. In such a case, your doctor may use energy waves to destroy the source of the arrhythmia (ablation) or, sometimes, to destroy the AV node. A permanent pacemaker is then inserted to control the heart rate. If these procedures might help, your doctor will discuss the risks and benefits with you. Your doctor may also discuss other options, such as heart surgery.
Living With an Arrhythmia

With some types of arrhythmias, making a few lifestyle changes is all the treatment you’ll ever need. If your arrhythmia does require further treatment, it will be tailored to your condition. For most people with an abnormal heart rhythm, life—with all its activities—goes on as usual.

Take our Patient Survey. Help us help other patients. Please visit www.kramesurvey.com to provide your feedback on this booklet.

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