

Heart arrhythmias

Understanding abnormal
heart rhythm



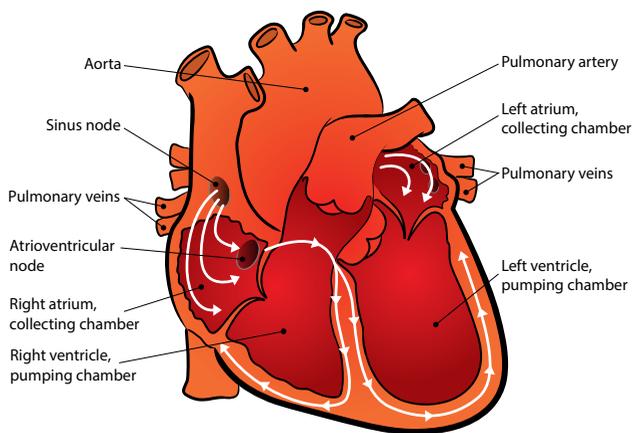
Your heart and how it works

Arrhythmias are an abnormal heartbeat rhythm caused by changes in your heart's electrical system. There are many different kinds of arrhythmias. Some may cause your heart to skip or add a beat now and again, but have no effect on your general health or ability to lead a normal life. Other arrhythmias are more serious and life-threatening. Untreated, they can affect your heart's pumping action, which can lead to dizzy spells, shortness of breath, faintness or serious heart problems.

What causes arrhythmias?

Arrhythmias are caused by a problem in your heart's electrical system. Some causes of arrhythmias include:

- **Irritable heart cells** – Sometimes heart cells begin to malfunction and start sending out electrical signals when they normally wouldn't. Signals from these malfunctioning heart cells interfere with the proper signals from the natural pacemaker within the heart. This 'confuses' your heart and makes it beat irregularly.



The white arrows show the movement of electrical signals in the heart. They travel from the sinus node throughout the atria and then pass on to the ventricles.

- **Blocked signals** – The electrical signals that tell your heart to beat may get 'blocked'. This makes your heart beat very slowly.
- **Abnormal pathway** – Sometimes the electrical signals start at the right place and time, but get interrupted and misdirected so they don't follow the right path through your heart and cause an arrhythmia.
- **Medicines and stimulants** – In some cases, medicines and other substances, such as caffeine, nicotine and alcohol, can cause an arrhythmia.

What are the different kinds of arrhythmias?

Bradycardia (a slow heartbeat)

Bradycardia is when your heart beats too slowly; generally less than 60 beats per minute. It is serious when your heart beats so slowly that it can't pump enough blood to meet your body's needs. Untreated, bradycardia can cause excessive tiredness, dizziness, lightheadedness or fainting, because not enough blood can reach your brain.

A slow heartbeat may be normal, and can be associated with improved physical fitness.

Sick sinus syndrome is when the natural pacemaker in your heart malfunctions and 'fires' too slowly, telling your heart to beat slowly. It can be caused by age or by fatty tissue in the arteries that take blood to your heart.

Heart block is when there is a block or delay in the electrical signal from your heart's collecting chambers (atria) to its pumping chambers (ventricles). It is uncommon but can be serious. Symptoms can be mild or severe, depending on the location and seriousness of the blockage.

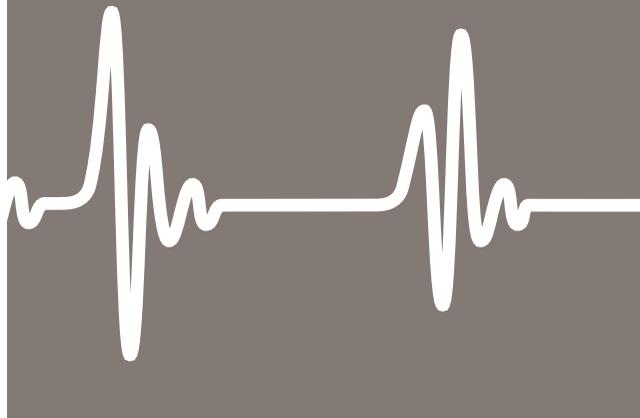
Tachycardia (a fast heartbeat)

Tachycardia is when your heart beats too fast, generally more than 100 beats per minute. Some forms of tachycardia are easily treated and not serious, while others can be life-threatening.

Supraventricular tachycardia (SVT) is a rapid heartbeat that starts in the collecting chambers of the heart, the atria, or the electrical pathway from the atria. Common types of SVT are atrial flutter and atrial fibrillation.

Did you know?

There is a normal electrical pathway that stimulates your heart to beat. Normally, your heart's pumping process is repeated at a regular rate, at about 60 to 100 times every minute. When parts of your body need more oxygen, such as during physical activity, your heart beats faster. When you rest or sleep, your body needs less oxygen so your heart beats more slowly.



Atrial flutter is when an extra or early electrical signal travels around the atria in a circle instead of along the normal signal pathway. This 'overstimulation' causes the atria to contract quickly or 'flutter' at a much higher rate than normal. Most of this fluttering is blocked out by the electrical pathway from the atria to prevent the pumping chambers of the heart, the ventricles, from beating too fast. Atrial flutter is usually not life-threatening but can still cause chest pain, faintness or more serious heart problems.

Atrial fibrillation is the most common form of SVT. It is when 'waves' of uncontrolled electrical signals, rather than the normal regulated signals, travel through the atria from the sinus node. These uncontrolled signals cause muscle fibres in the atria to contract out of time with each other, so that the atria 'quiver' or 'fibrillate'. Some of this abnormal electrical activity reaches the ventricles, causing a rapid and irregular heartbeat.

When your heart is in atrial fibrillation, it does not pump regularly or work as well as it should. Atrial fibrillation can cause a 'fluttering' heartbeat, an irregular pulse, chest pain or tightness, weakness and dizziness. Atrial fibrillation can also increase your risk of stroke, because blood trapped in the atria can clot. These clots may break loose from your heart, enter the bloodstream and travel to your brain, causing a stroke.

Paroxysmal supraventricular tachycardia (PSVT) or paroxysmal tachycardia (PAT) is when there is a 'short circuit' caused by an extra electrical connection or pathway in your heart. It makes your heart prone to episodes of sudden regular rapid heartbeats that may last for minutes or even hours. Although these episodes may be frightening, they are rarely dangerous and can be very effectively treated.

Wolff-Parkinson-White syndrome is a condition where an extra or abnormal electrical pathway connects the atria to the ventricles, causing attacks of SVT.

Ventricular tachycardia is when the ventricles beat too fast. It is potentially very dangerous. If ventricular tachycardia becomes so severe that the ventricles can't pump effectively, it can lead to ventricular fibrillation. Ventricular fibrillation is when the electrical signal that should trigger your heartbeat splits away in uncontrolled 'waves' around the ventricles. This life-threatening situation must be corrected immediately.

What are the treatments for arrhythmias?

The treatment will depend on what is causing the arrhythmia and how much it is affecting your lifestyle. Treatments include:

- medicines that slow down a very fast heart beat or to thin the blood to reduce the chance of a clot breaking loose from your heart and travelling through the blood to your brain, causing a stroke
- implantable medical devices such as pacemakers, which use a small electrical current to stimulate the heart muscle to pump regularly or defibrillators that correct your heartbeat
- other procedures such as cardiac ablation, a procedure that inactivates the areas of your heart responsible for the abnormal electrical signals in your heart or cardioversion, a procedure where your heart is given a 'shock' to help restore a normal heartbeat.

You can make simple lifestyle changes to reduce your chance of arrhythmia. Take your medicines as directed, be smoke free, maintain a healthy body weight and be active.

What can I do to reduce the chance of heart arrhythmia?

There are simple lifestyle changes you can make to reduce your chance of heart arrhythmia and, in some cases, other heart problems. To lower your risk, you should:

- take your medicines as directed by your doctor
- be smoke free
- achieve and maintain a healthy body weight
- be physically active.

Want to know more?

For more information, call our Health Information Service on 1300 36 27 87 (local call cost) and talk to one of our trained health professionals. You can also visit www.heartfoundation.org.au



For heart health information,
please contact us

1300 36 27 87

heartfoundation.org.au

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