

Cardiac Arrhythmias

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Over a 70-year life span, the heart beats about 2.5 billion times. Many types of heart disease can cause cardiac arrhythmias in which the heart beats too fast or too slow or irregularly. Cardiac arrhythmias can reduce the function of the heart resulting in insufficient blood and oxygen to vital organs. Very serious cardiac arrhythmias can sometimes occur, resulting in sudden death.

These days, most cardiac arrhythmias can be effectively treated.

Types of Cardiac Arrhythmia

- **Premature beats:** These are the most common type, are usually not harmful, and normally require no treatment.
- **Atrial fibrillation:** About 4% of people in the US have atrial fibrillation. It tends to occur in older people, often as a result of some underlying heart disease. Atrial fibrillation can be associated with blood clots in the heart but cardiologists can usually identify those at higher risk of blood clot.
- **Bradycardia:** This means an unusually slow heart rate. It can cause fatigue, lightheadedness or rarely fainting.
- **Tachycardia:** This means an unusually fast heart rate. It can cause palpitations, a sensation of rapid heart action, dizziness, lightheadedness, or rarely fainting.
- **Ventricular arrhythmias:** Ventricular tachycardia (rapid heart rate arising in the ventricles) and ventricular fibrillation (ventricles begin to quiver and stop beating effectively) are serious cardiac arrhythmias. If ventricular fibrillation is not corrected immediately (for example by an electric shock to the heart within 3-5 minutes), brain and heart damage and death will occur.

Treatment of Cardiac Arrhythmias depends on the Cause and the Severity and may include:

- **No treatment** if the cardiac arrhythmia is not dangerous and does not result in troubling symptoms.
- **Antiarrhythmic drugs** can prevent or treat cardiac arrhythmias but should be selected carefully and used cautiously to make sure they do more good than harm. Patients with chronic or recurrent atrial fibrillation, aspirin, Coumadin or other drugs to prevent blood clots may be used, and digoxin, beta blockers or calcium channel blockers may be used to prevent excessive heart rate.
- **Cardioversion** gives an electric shock to the heart to restore normal heart rhythm. It can resuscitate patients who have sudden cardiac death. If it is used to restore normal rhythm in other types of cardiac arrhythmia such as atrial fibrillation, the patient may be given anticoagulant therapy for some time before cardioversion to reduce the chances of a blood clot being released from the heart.
- **Cardiac pacemakers** can be used to regulate (“pace”) the heart. Nowadays, small permanent cardiac pacemakers are used with a battery just beneath the skin and wires through the veins into the heart chambers.
- **Cardioverter/defibrillator (ICD)**. An ICD is inserted surgically, just as a pacemaker is. The ICD constantly monitors heart rhythm, and when it senses that the rhythm is abnormal, the ICD gives the heart a small shock to return the rhythm to normal.
- **Catheter ablation** in which radio energy destroys a small area of cardiac cells that may be causing repeated cardiac arrhythmias.

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