

CARDIAC ARRHYTHMIA

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Definition

Cardiac dysrhythmia (also known as **arrhythmia** and **irregular heartbeat**) is any of a large and heterogeneous group of conditions in which there is abnormal [electrical activity](#) in the [heart](#). The [heartbeat](#) may be too fast or too slow, and may be regular or irregular.

Some arrhythmias are life-threatening [medical emergencies](#) that can result in [cardiac arrest](#). Others cause symptoms such as an abnormal awareness of heart beat ([palpitations](#)), and may be merely uncomfortable. These palpitations have also been known to be caused by atrial/ventricular [fibrillation](#), wire faults, and other technical or mechanical issues in cardiac [pacemakers/defibrillators](#). Still others may not be associated with any symptoms at all, but may predispose the patient to potentially life threatening [stroke](#) or [embolism](#).

Some arrhythmias are very minor and can be regarded as normal variants. In fact, most people will on occasion feel their heart skip a beat, or give an occasional extra strong beat; neither of these is usually a cause for alarm.

The term [sinus arrhythmia](#) refers to a normal phenomenon of mild acceleration and slowing of the heart rate that occurs with breathing in and out. It is usually quite pronounced in children, and steadily decreases with age. This can also be present during meditation breathing exercises that involve deep inhaling and breath holding patterns.

Classification

Arrhythmia may be classified by rate (normal, tachycardia, bradycardia), or mechanism (automaticity, reentry, fibrillation). It is also appropriate to classify by site of origin:

Atrial	Junctional arrhythmia	Ventricular	Heart blocks	SADS
<ul style="list-style-type: none"> -Premature Atrial Contractions(PACs) -Wandering Atrial Pacemaker -Multifocal Atrial tachycardia -Atrial Flutter -Atrial Fibrillation(Afib) 	<ul style="list-style-type: none"> *Supraventricular Tachycardia (SVT) *AV nodal reentrant tachycardia ; is the most common cause of Paroxysmal Supraventricular Tachycardia (PSVT) *Junctional rhythm *Junctional tachycardia *Premature Junctional Contraction. 	<ul style="list-style-type: none"> *1st degree Heart block, which manifests as PR prolongation. *2nd degree Heart block; Type 1&2 *3rd degree Heart block; also known as complete heart block. 	<ul style="list-style-type: none"> -Premature Ventricular Contraction -Accelerated idioventricular rhythm -Monomorphic Ventricular Tachycardia -Polymorphic Ventricular Tachycardia -Ventricular Fibrillation . 	<p>sudden arrhythmic death syndrome, is a term used to describe sudden death due to cardiac arrest brought on by an arrhythmia in the absence of any structural heart disease on autopsy ref.</p>

Problems & Hypotheses

Rapid Heart beats	Tiredness	Fainted	Anxious
<ul style="list-style-type: none">-Increase in sympathetic activity-Myocardial infarction-Severe exercises-Hyperthyroidism-Diabetes-Drugs use-Heart attack-Hypertension-Cardiac congenital defect-Cardiomyopathy-Cardiac infection-Valvular disease-Heart failure-Smoking-Pheochromocytoma-Hypoxia-Angina	<ul style="list-style-type: none">-Anemia-Anxiety-Hypo-hypertension-Hypoglycemia-Bacterial -infection-Malnutrition-Insomnia-Dehydration-Myopathy-Depression	<ul style="list-style-type: none">-Hypotension-Hypoglycemia-Hypovolemic-Anemia-Stroke-Tachycardia	<ul style="list-style-type: none">-Stress-Worried-Psychogenic problems-Insomnia

Questions to ask the patient

- Any history of medication?*
- Any history of chronic disease(Hyperthyroidism, diabetes ,hypertension)?*
- Any history of familial such problems?*
- Any history of hospitalization?*
- Any history of smoking, alcohol?*
- Any thing relief symptoms or worsen them?*

causes

Many things can lead to, or cause, an arrhythmia, including:

- Scarring of heart tissue (such as from a heart attack)
- Changes to your heart's structure, such as from cardiomyopathy
- Blocked arteries in your heart (coronary artery disease)
- High blood pressure
- Diabetes
- Overactive thyroid gland (hyperthyroidism)
- Smoking
- Drinking too much alcohol or caffeine
- Drug abuse
- Stress
- Medications
- Dietary supplements and herbal treatments
- Electrical shock

Symptoms

Arrhythmias may not cause any signs or symptoms. In fact, the doctor might find that the patient has an arrhythmia before the patient does, during a routine examination.

Some people do have noticeable arrhythmia symptoms, which may include:

- A fluttering in the chest
- A racing heartbeat (tachycardia)
- A slow heartbeat (bradycardia)
- Chest pain
- Shortness of breath
- Lightheadedness
- Dizziness
- Fainting (syncope) or near fainting

Noticeable signs and symptoms don't always indicate a serious problem. Some people who feel arrhythmias don't have a serious problem, while others who have life-threatening arrhythmias have no symptoms at all.

Tests and Diagnosis

- Electrocardiogram (ECG).
- Holter monitor.
- Event monitor.
- Echocardiogram.
- Cardiac computerized tomography (CT) or magnetic resonance imaging (MRI).

Treatment

*Treating slow heartbeats :

f slow heartbeats (bradycardias) don't have a cause that can be corrected — such as low thyroid hormone levels or a drug side effect — doctors often treat them with a pacemaker.

*Treating fast heartbeats:

For fast heartbeats (tachycardias), treatments may include one or more of the following:

- Vagal maneuvers.
- Medications(anti-arrhythmic medications).
- Cardioversion.
- Ablation therapy(In this procedure, one or more catheters are threaded through your blood vessels to the inner heart).

*Implantable devices:

- Pacemaker.
- Implantable cardioverter-defibrillator (ICD).

*Surgical treatments:

- Maze procedure(This involves making a series of surgical incisions in the upper half of your heart (atria)).
- Ventricular aneurysm surgery
- Coronary bypass surgery.

COMPLICATIONS

Certain arrhythmias may increase your risk of developing conditions such as:

- Stroke.
- Heart failure.

Prevention

Cardiac arrhythmias that result from coronary artery disease can be prevented by taking the following actions to modify your risk factors:

- Eat a heart healthy diet, including eating an abundance of vegetables and fruits, fish, and plant sources for protein and avoiding saturated and trans fats.
- Control your cholesterol and high blood pressure.
- Quit smoking.
- Control your weight.
- Get regular exercise.

Risk Factors

Certain factors may increase the risk of developing an arrhythmia. These include:

- Coronary artery disease, other heart problems and previous heart surgery.
- High blood pressure.
- Congenital heart disease.
- Thyroid problems.
- Drugs and supplements.
- Obesity.
- Diabetes.
- Obstructive sleep apnea.
- Electrolyte imbalance.
- Drinking too much alcohol.
- Caffeine or nicotine use.