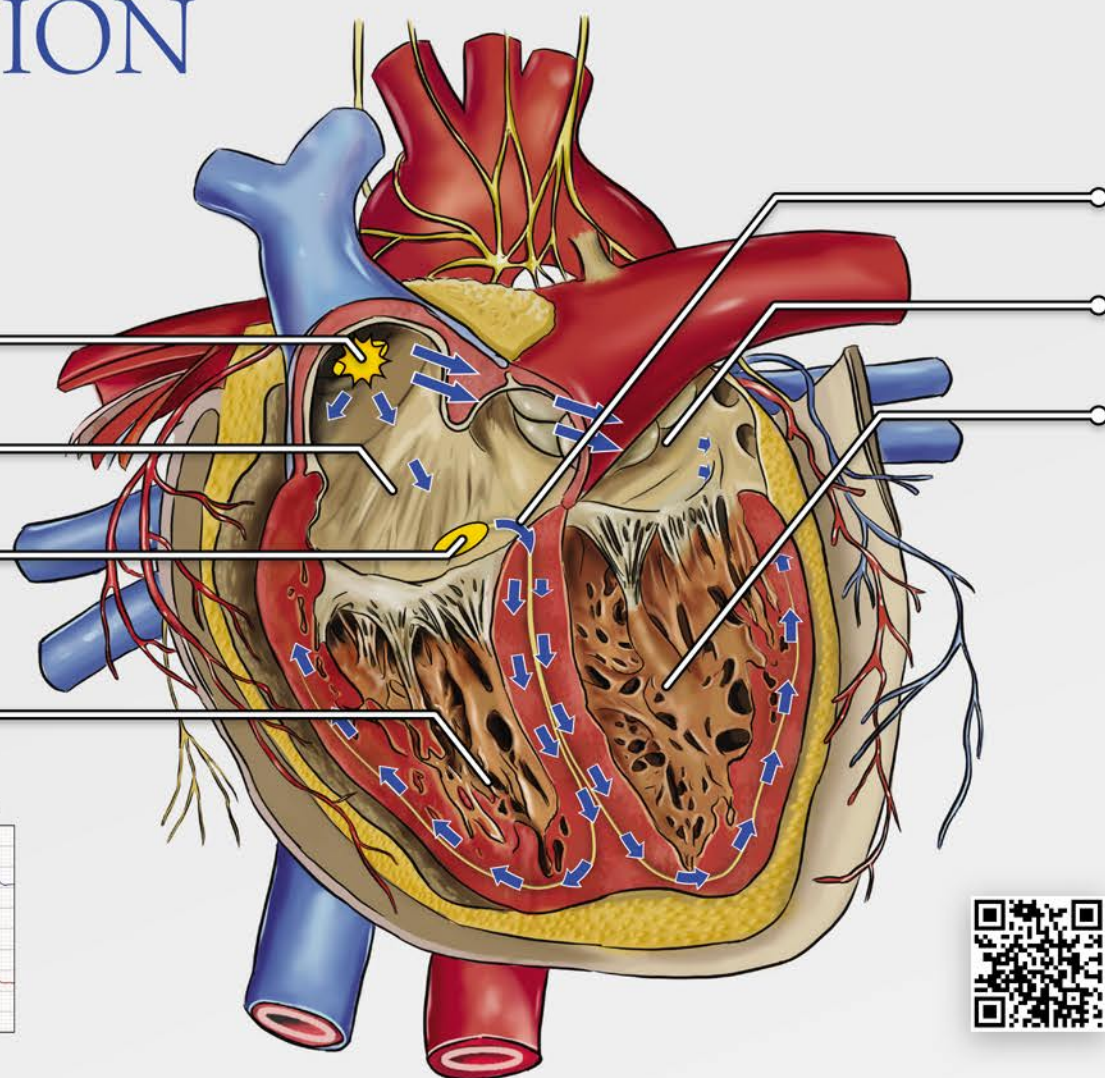


NORMAL CONDUCTION OF THE HEART

SINOATRIAL (SA) NODE
 RIGHT ATRIUM
 ATRIOVENTRICULAR (AV) NODE
 RIGHT VENTRICLE



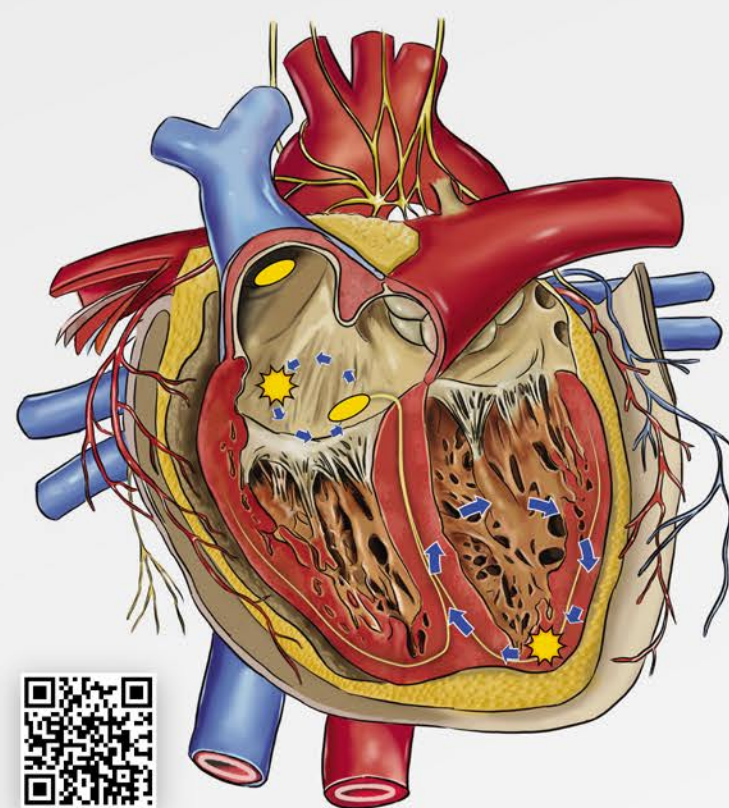
BUNDLE OF HIS
 LEFT ATRIUM
 LEFT VENTRICLE

NORMAL SINUS RHYTHM

Normal Sinus Rhythm is the normal beating or rhythm of the heart and is measured by electrical activity through the heart. Several requirements are needed to maintain Normal Sinus Rhythm:

- Heart rate between 60-100 beats per minute
- Regular rhythm
- Electrical impulse initiated in the Atria -- SA Node
- Electrical impulse spreads down through the atria to the AV Node.
- Conduction continues down through the ventricles via the Bundle of His.
- Conduction follows the left and right Bundle Branches to stimulate and contract the ventricles.

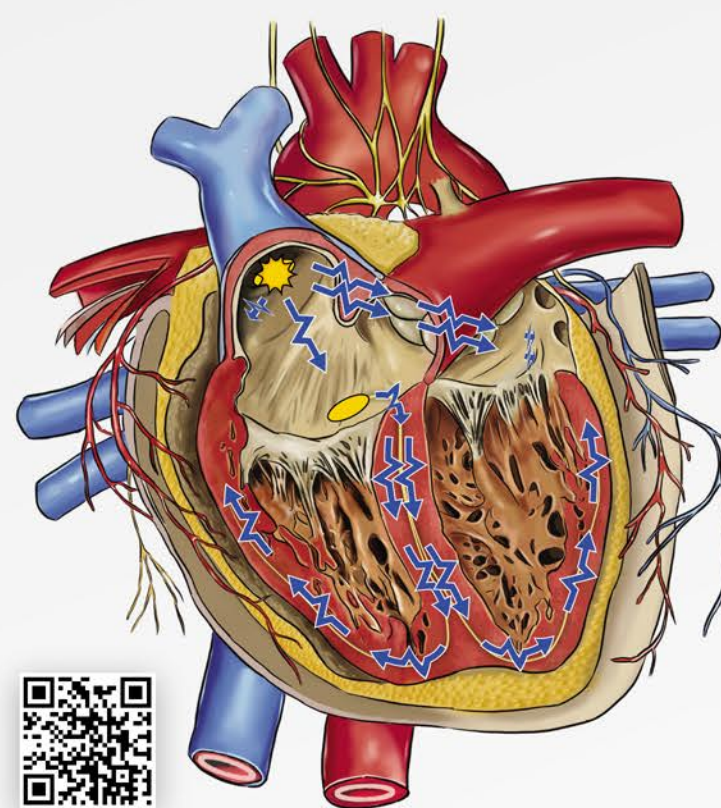
COMMON CARDIAC ARRHYTHMIAS



TACHYCARDIA

Tachycardia refers to a fast heart rate, greater than 100 beats per minute in adults, caused by reasons other than exercise, fever or stress. Tachycardia can occur in different sections of the heart.

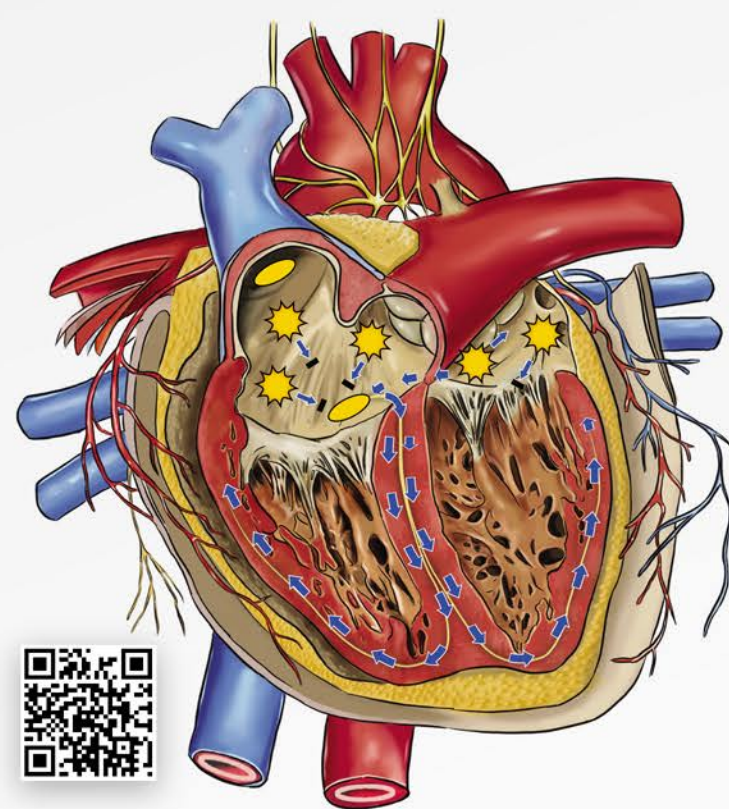
The lower in the heart the tachycardia occurs, the more severe the arrhythmia is.



BRADYCARDIA

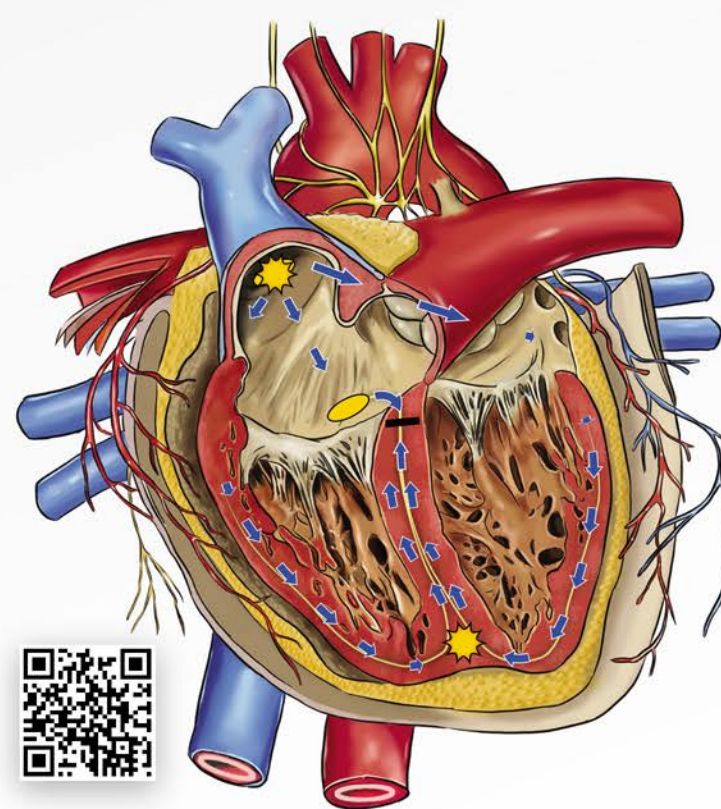
Bradycardia refers to a slow heart rate, generally below 60 beats per minute in adults. Bradycardia can occur in different sections of the heart.

The lower in the heart that the electrical impulse originates, the slower the heart rate becomes and the more severe the arrhythmia is.



ATRIAL FIBRILLATION

Electrical impulses originate from multiple areas in the heart's upper chambers (the atria). These impulses cause irregular and chaotic contractions of the atria and won't allow the atria to effectively empty blood into the two lower chambers of the heart (the ventricles). This can cause blood pooling and blood clotting to occur. When the atrial fibrillation returns to a normal rhythm, there is a risk of these blood clots moving out of the heart and getting lodged elsewhere. Patients with atrial fibrillation may be at higher risk of stroke.



HEART BLOCK

Electrical impulses start normally in the SA Node but are delayed, interrupted or terminated below the atrium, which would cause a delayed or missed ventricle contraction. Heart blocks are identified by three degrees of severity and can be permanent or transient.



▶ An arrhythmia (ah-RITH-me-ah) is any abnormal electrical activity in the heart.

ARRHYTHMIA

BASIC FACTS

- An arrhythmia happens when some part of the heart's electrical system doesn't function as it should.
- Most arrhythmias are harmless, but some can be serious or even life threatening.
- Millions of Americans have arrhythmias, which are more common among older individuals.
- Arrhythmias have many causes. Heart disease is a common cause of serious arrhythmias. Stress, smoking, heavy alcohol use, heavy exercise, some drugs (such as cocaine or amphetamines), and some medicines can lead to arrhythmias in some people.

SYMPTOMS

- Palpitations (an unpleasant feeling that your heart is skipping beats or beating too hard)
- A fast or racing heartbeat, a slow heartbeat, or an irregular heartbeat
- Weakness, dizziness, light-headedness, sweating, and fainting
- Shortness of breath
- Chest pain
- Anxiety

DIAGNOSTIC TESTING

If a standard ECG test does not detect an arrhythmia, your doctor may have you wear a portable heart monitor that can record the heartbeat for a longer period of time. Your doctor may prescribe any of three types of ambulatory cardiac monitors that are useful in detecting arrhythmias that come and go.

HOLTER MONITOR

This small, portable device records the heart's electrical activity continuously over a 24 to 48 hour period.

EVENT MONITOR

Event monitors are useful to diagnose arrhythmias that only occur once in a while. The small, portable device is worn continuously for up to 30 days, and it records the heart's electrical activity when you push a button on the device.

MOBILE CARDIAC TELEMETRY

Mobile Cardiac Telemetry (MCT) is the latest technology in ambulatory cardiac monitoring. Like an event monitor, MCT is useful to diagnose arrhythmias that only occur once in a while. It is a small, portable heart monitoring system that can automatically capture and transmit your heart's abnormal activity, to a cardiac monitoring center, even if you don't feel a symptom.

TREATMENT

Common arrhythmia treatments include medicines, medical procedures, and surgery. Treatment is needed when an arrhythmia causes serious symptoms, such as dizziness, chest pain, or fainting, or when it increases your chances of developing complications, such as heart failure, stroke, or sudden cardiac death.

Serious arrhythmias can often be successfully treated. Most people with arrhythmias are able to live normal lives.