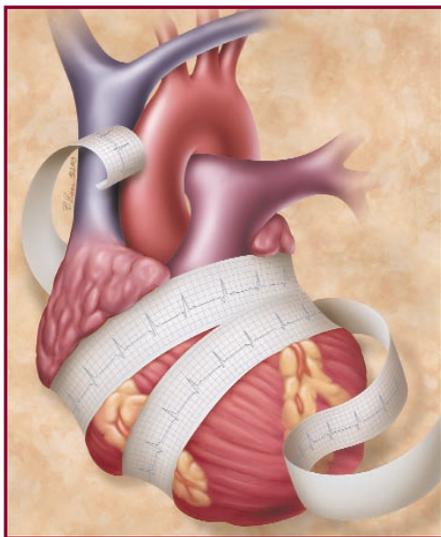


Slow Heartbeat



Bradycardia is characterized by an abnormally slow heart rhythm. The weak pace may mean the heart doesn't beat often enough to ensure blood flow.

Each heart has its own normal rhythm brought about by the seamless flow of electrical impulses that begins in the heart's natural "pacemaker" (sinus node). The electricity flows through the upper chambers (atria), crosses the bridge between upper and lower chambers (atrioventricular node) and travels to the lower chambers (ventricles). This passage of electricity culminates in a carefully coordinated contraction of heart muscle that pushes blood throughout the human body.

Each day, a normal heart contracts about 100,000 times, at a rate anywhere from 60 to 100 times a minute. Abnormally slow heart rates are typically those below 60 beats a minute and either can be relatively harmless or life threatening.

Changes in rate brought about by variations in activity, diet, medication and age are normal and common. For some people, such as athletes in top condition, a resting heart rate of below 60 can be normal. Similarly, at certain times, such as sleep, a heart rate may slow and still be normal.

When a heart slows for no apparent reason, however, it can be a sign of an abnormality in the electrical pathway and is cause for evaluation. If the problem is in fact a slow heart rhythm (bradycardia), a pacemaker is often the treatment of choice.

Symptoms

Some bradycardias do not produce any symptoms; others do and warrant treatment. When the heart beats too slowly, not enough oxygen-rich

blood flows throughout the body. So, it makes sense that the symptoms of a slow heartbeat include:

- Fatigue, weakness
- Dizziness
- Lightheadedness
- Fainting or near fainting
- Shortness of breath

Types of Arrhythmias

Understanding some common terms in the language of cardiac arrhythmias helps sort through the types of rhythm problems. An arrhythmia is any abnormality in heart rhythm. Arrhythmias are categorized in three main ways:

Rate

If the heart rate is slow, or less than 60 beats a minute, it is considered bradycardia. Alternatively, a fast **over** ➤

ABOUT HEART BLOCK/AV BLOCK

Heart block occurs when the electrical impulse that originates in the upper chambers of the heart is unable to pass to the lower chambers of the heart at the right pace. Heart block delays the impulse or may block it completely. (Heart block is sometimes called AV block, because the impulse slows or does not pass through the atrioventricular node that joins the upper and lower chambers of the heart.) There are three kinds of heart block:

- **First-degree:** The beats pass from the upper chambers to the lower chambers, but conduction is slower than normal
- **Second-degree:** Not all of the beats pass from the heart's upper to lower chambers, so some are dropped
- **Third-degree/Complete:** The impulses cannot pass from the upper to the lower chambers, so the lower chambers originate their own impulse. This means they do beat and pump blood, but at a slower rate and more inefficiently than if the impulse originated from the upper chambers of the heart

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Slow Heartbeat *continued*

heart rate, above 100 beats a minute, is known as a tachycardia.

Location

The location of the problematic electrical circuit helps define the arrhythmia. For instance, a rhythm is called supraventricular if it originates above the ventricles (lower chambers). So, the problem is most likely in the upper chambers (atria). It follows that a ventricular arrhythmia is the result of a problem in the lower chambers (ventricles.)

Irregular

The nature of the heartbeat, whether it is steady or chaotic, is another key to categorizing an arrhythmia. A rapid beat that is irregular and chaotic may be fibrillation, or a quivering beat.

ABOUT SICK SINUS SYNDROME

Sick sinus syndrome (SSS) is a form of bradycardia in which the sinoatrial node (the heart's natural pacemaker) is not functioning as it should. This means that the electrical signals that normally start a heartbeat do not all leave the SA node (sinoatrial block) or that there are longer pauses in the generation of the electrical signal (sinus arrest). SSS can cause tachycardia (heart rates that are too fast) or bradycardia-tachycardia syndrome (heart rates that fluctuate between being too slow and too fast).

Causes

Slow heart rates can be the result of certain medications, congenital heart diseases or the degenerative processes of aging.

The most common causes of bradycardia are problems with the heart's electrical pathway. The problem can occur at any point on the path, causing an electrical "block." Often it originates in the heart's natural "pacemaker", called the sinoatrial (SA) node. This can lead to sick sinus syndrome. (See sidebar.)

Electrical pathway problems can cause the heart to beat too slowly all the time or only occasionally. In either case, the heart may not pump enough blood to meet the body's needs. As the heart rate declines, there is insufficient blood flow to the brain, causing feelings of lightheadedness and, sometimes, fainting.