

Patient information factsheet

How the heart works

The human heart is a muscle, about the size of your fist. It works like a pump, sending blood around your body, allowing your organs to function.

If you are being treated for heart rhythm problems, you may find it helpful to read this factsheet in order to understand how your heart and its electrical system functions.

Your heart's structure

Your heart is made up of three layers of tissue:

- **Pericardium** – thin, protective outer lining.
- **Myocardium** – thick, muscular middle layer which works to contract and squeeze blood out of your heart.
- **Endocardium** – thin, inner lining.

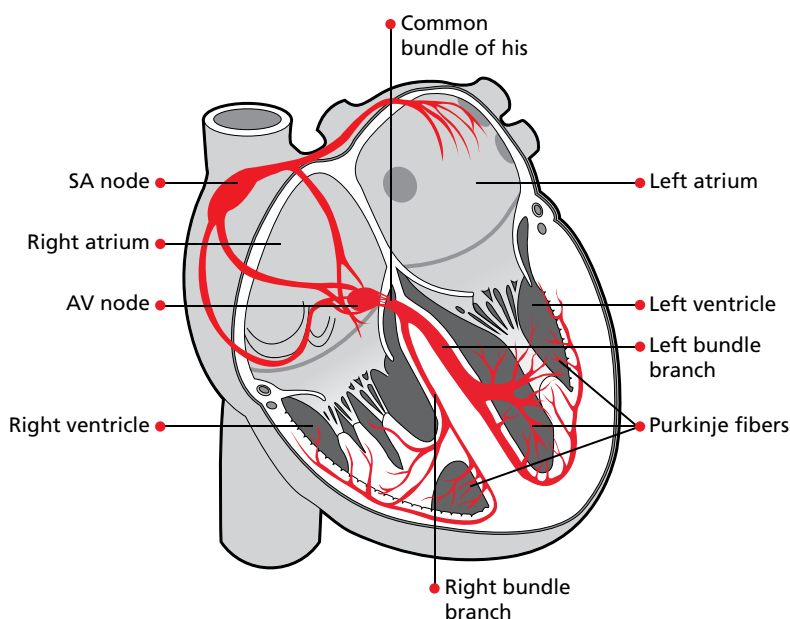
Your heart's chambers

Inside the heart are four chambers:

- **Atria** – the upper chambers.
- **Ventricles** – the lower chambers.

The septum is the thin, muscular wall that divides the left and right sides of the heart.

Diagram of the heart



Your heart's electrical system

Your heart has its own electrical conduction system which sends signals throughout the upper chambers (atria) and lower chambers (ventricles), making it beat in a regular, coordinated rhythm.

The conduction system consists of two nodes that contain conduction cells and special pathways that transmit the impulse:

- The sino-atrial node (SA node) fires an electrical impulse and is responsible for setting the rate and rhythm of a normal heartbeat.
- The electrical impulse fired from the SA node spreads throughout the atria, causing them to contract and squeeze blood into the ventricles.
- Atrioventricular node (AV node) is the electrical doorway, slowing and regulating the impulses travelling between the atria and ventricles.
- As the impulse travels down the electrical pathway into the ventricles the heart contracts and pumps blood around the body.
- The cycle then begins again.

A normal adult heart beats in a regular pattern 60 to 100 times a minute. This is called sinus rhythm.

Heart rhythm problems (arrhythmia)

An arrhythmia is an abnormality of the heart's rhythm.

It can be caused by a problem with the heart's electrical system – if the conduction pathway is damaged, blocked, or an extra pathway exists, for example.

If you have arrhythmia your heart may beat:

- too slowly (bradycardia)
- too quickly (tachycardia)
- or irregularly

These abnormalities can range from a minor discomfort or inconvenience to a more serious, or potentially fatal problem.

Your healthcare team will be able to explain the exact type of arrhythmia that you have, if this applies to you, and answer any questions you have about how this may affect your heart's function.

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