

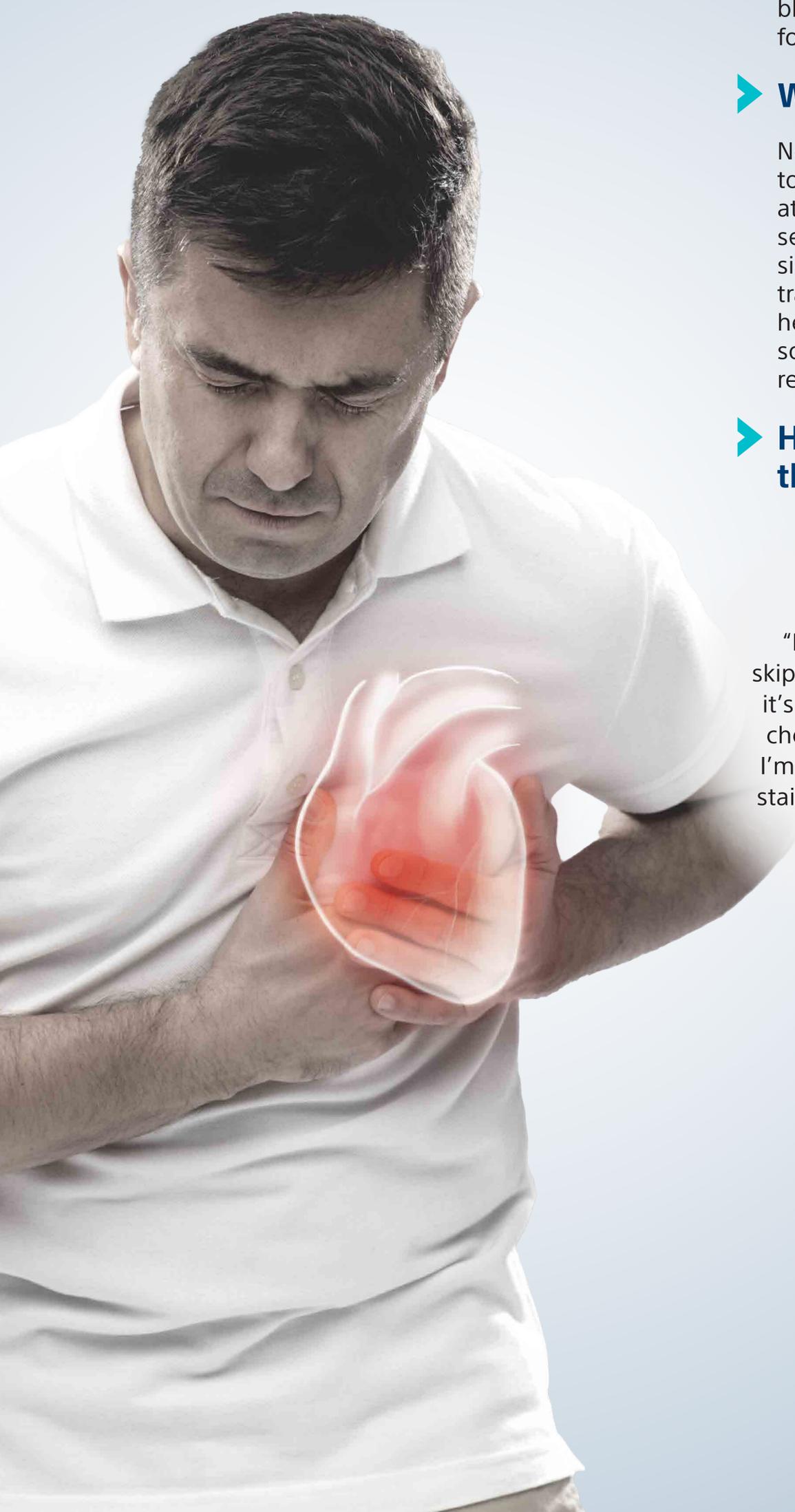


# Understanding arrhythmias

Important information for patients and families



# Understanding tachycardia



## ➤ What is atrial fibrillation (AFib)?

AFib is the most common type of supraventricular tachycardia. During AFib, the heartbeat becomes irregular and rapid – sometimes up to 4 times faster than normal.

This makes it hard for the heart to efficiently pump blood and increases the risk of blood clots forming, which may clog or block blood vessels.

## ➤ What happens during AFib?

Normally, the electrical signal that tells your heart to beat comes from the sinoatrial node in the right atrium. During AFib, signals start irregularly from several areas in the atria. These disorganized signals occur so quickly that only some of them are transferred to the lower chambers. This causes the heart's upper chambers to contract randomly and sometimes so fast that the heart's muscle can't relax properly between contractions.

## ➤ How patients describe their experience

"My heart flip-flops, skips beats, and feels like it's banging against my chest wall, especially if I'm carrying stuff up my stairs or bending down."

"I had no symptoms at all. I discovered my AFib at a regular check-up. I'm glad we found it early."

"I was nauseated, light-headed, and weak. I had a really fast heartbeat and felt like I was gasping for air."

# Understanding arrhythmia

## ➤ What is an arrhythmia?

An arrhythmia is a **disruption in the heart's normal electrical system** which causes an abnormal or irregular heart rhythm for no apparent reason. Anyone can develop an arrhythmia, even a young person without a previous heart condition. However, arrhythmias are most common in people over 65 who have heart damage caused by a heart attack, cardiac surgery or other conditions.

## ➤ What are the symptoms?

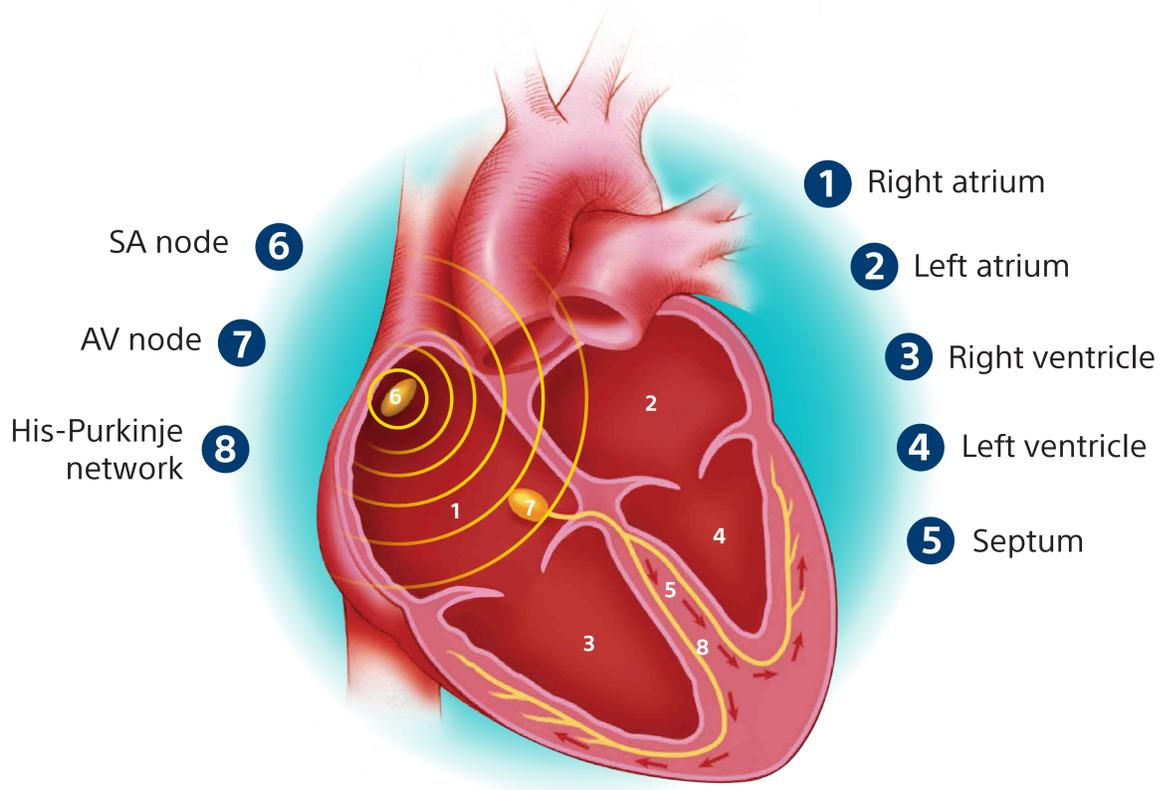
Symptoms of arrhythmias can vary widely from person to person. An arrhythmia may last for a few minutes, a few hours, a few days, even a few weeks at a time. Some people may also feel no symptoms at all. Most commonly, patients report feeling the following:

-  Fatigue and weakness
-  Shortness of breath
-  Chest pain
-  Rapid heartbeat
-  Sensation of your heart fluttering (palpitations)
-  Sensation of a missed or extra heartbeat
-  Dizziness, fainting and sensation of lightheadedness

## ➤ There are many different types of arrhythmias

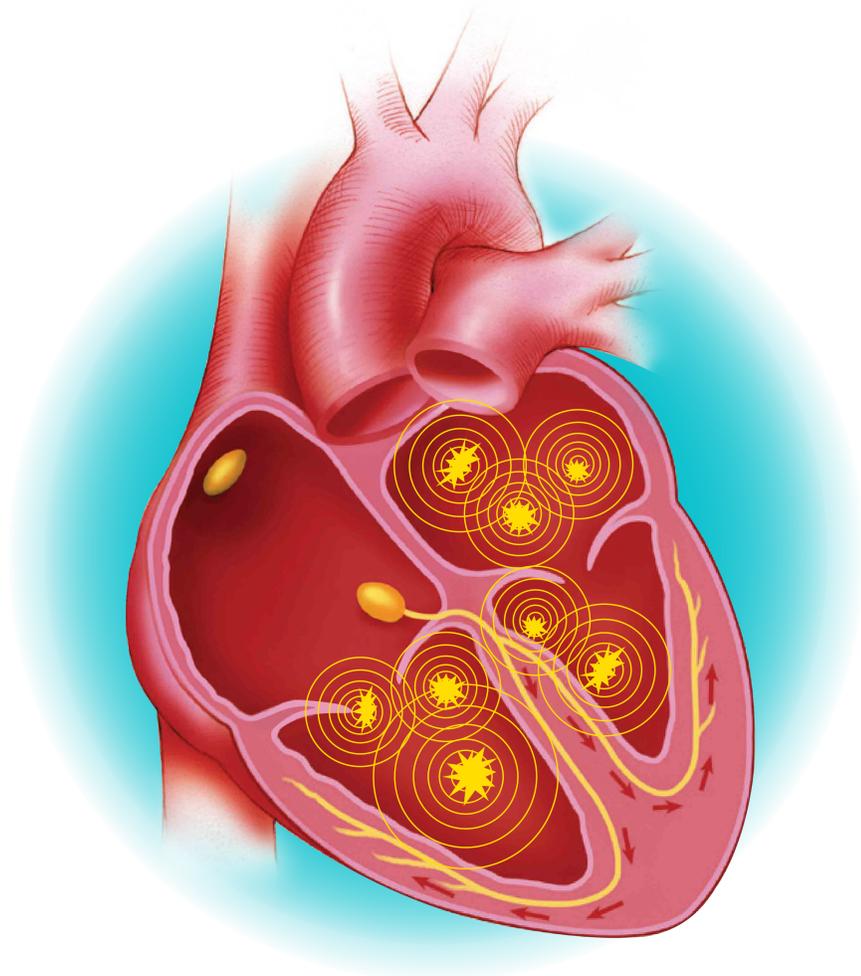
- Heartbeats that are too slow (bradycardia)
- Heartbeats that are too fast (tachycardia)
- Extra beats
- Skipped beats

## The heart's physical structure



The heart has a special electrical system that controls the rate and rhythm of the heartbeat. With each heartbeat, an electrical signal travels from the top of the heart to the bottom.

## Abnormal electrical signal



An arrhythmia is a disruption in the heart's normal electrical system which causes an abnormal or irregular heart rhythm for no apparent reason. The faulty signalling causes the heart to beat too fast, too slow or irregularly.

# Diagnosis



## Electrocardiogram (ECG/EKG)

Electrical signals travelling through heart

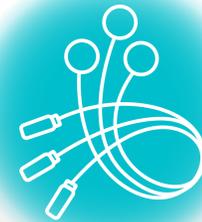
Produced by recording machine attached to patient via adhesive electrodes



## Echocardiogram

Moving picture of the heart

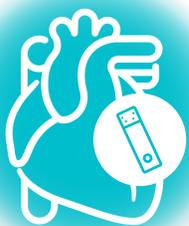
Created by imaging machine which uses ultrasound



## Holter monitor

Small, portable device attached to the patient via 5 adhesive electrodes

Collects ECG information over a period of 24 to 48 hours, capturing arrhythmia that comes and goes



## Event recorder and loop recorder

Smaller device worn by patient over a longer period of time

Records heart activity only when the patient feels the symptoms



## Tilt table test

To be performed if fainting (syncope is a symptom)

The patient lies on a special table that tilts upright to a 70-80 degree angle for a period of time



## Cardiac catheterization

Day procedure where heart pressures and blood flow are visualized on an X-ray machine

Done by inserting a thin hollow tube through a blood vessel and into the heart



## Electrophysiology (EP) study

Medical specialty focuses on disorders of electrical system of the heart

Special catheters record electrical signals to define and characterize abnormal heart rhythm

# Treatment options



## ► Cardiac ablation

Minimally-invasive procedure to identify and eliminate the source of disruption to the heart's normal electrical system

- A small flexible tube (catheter) is inserted through a blood vessel (usually in the upper leg) into the heart to take measurements of electrical activity.
- Procedure performed under flouroscopy (X-ray) and using specialized cardiac mapping software to understand where the abnormal electrical impulse is originating from.
- Depending on the outcome of the electrical circuit, your physician will then choose between three different types of ablation technology to disarm or disrupt the abnormal arrhythmia.

**Catheter ablation can alternatively be done using:**



**Cryoablation**  
Intense cold



**Radiofrequency ablation**  
High-frequency energy



**Pulsed field ablation**  
Non-thermal microsecond electrical pulses



## Lifestyle changes

- Eat heart-healthy diet
- Limit/eliminate caffeine
- Exercise regularly
- Stop smoking



## Medication

- Antiarrhythmics – control rhythm of the heart
- Beta blockers – control rate at which heart beats



## Cardioversion

- Deliver a therapeutic shock to the heart – could be by external defibrillators or implanted devices in patient's chest or drugs to achieve cardioversion

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