



# Atrial fibrillation: What you need to know

Atrial fibrillation is also known as AFib or AF. AFib is the most common type of arrhythmia disorder (when your heart beats too quickly, too slowly, or with an irregular pattern) in the world. AFib is specifically the rapid, irregular beating of the heart's left atrium or upper chamber.

## What is AFib?

According to the National Heart, Lung, and Blood Institute, the heart's electrical system sends signals to the different chambers of the heart. These signals make the chambers beat regularly and ensure the heart pumps enough blood to the rest of the body. AFib causes the chambers to beat irregularly, which makes it harder for the heart to pump enough blood.

AFib can occur in brief or infrequent episodes. It can last for more than a week at a time, last for more than a year, or become permanent.

## What causes an irregular heart beat?

Changes to the heart's tissue or electrical signaling affect its ability to contract in rhythm. Some factors that can cause these changes include:

- High blood pressure
- Coronary heart disease
- Inflammation
- Stretching, thinning, or thickening of the heart's walls
- Fibrosis
- Reduced blood flow to the heart
- Buildup of proteins, cells, or minerals in the heart tissue

## What are the symptoms?

- Feeling tired, lightheaded, or dizzy
- Feeling like your heart is skipping a beat, fluttering, pounding, or beating too hard or fast
- Chest pain
- Low blood pressure
- Anxiety
- Shortness of breath

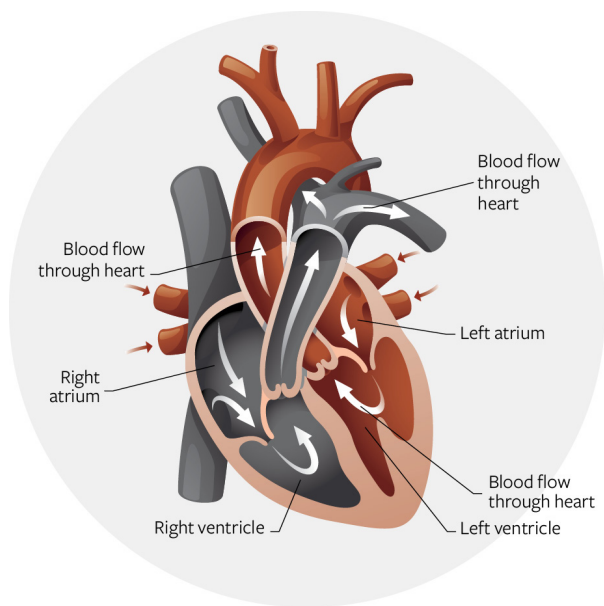
It's also important to know that many people with AFib do not experience any symptoms.

AFib can cause heart attacks and heart failure. It also increases the risk of ischemic [stroke](#), which occurs when a blood clot blocks a blood vessel in the brain. This prevents blood flow to the brain, causing brain cells to start dying.

## FAST FACT

In 2030, an estimated **12.1 million people** in the United States will have atrial fibrillation.

SOURCE: [CENTERS FOR DISEASE CONTROL AND PREVENTION](#)



In AFib, the beating in the upper chambers of the heart (the left and right atria) becomes irregular. This makes it harder for blood to flow from the atria to the lower chambers of the heart (the left and right ventricles) and to the rest of the body.

### What raises your risk for AFib?

Possible risk factors for AFib include:

- **Ageing.** Risk increases with age, especially if you're over 65 years old.
- **Family history.** If someone in your family has had AFib, that could increase your risk.
- **Genetics.** Some genes that influence fetal organ development or heart cells can increase your risk.
- **Surgical history.** Your risk increases if you have had surgery for another condition of the heart, lung, or esophagus.
- **Lifestyle habits.** These include a wide range of factors, including drinking alcohol, using certain drugs, or regularly participating in endurance sports. Stress and panic disorders are also risk factors for AFib.
- **Race.** People of European ancestry are more likely to develop the condition, but Black or African American people with AFib are more likely to have serious complications such as stroke, heart failure, and heart disease.
- **Certain health conditions.** Sleep apnea, obesity, diabetes, and chronic kidney disease are some of the conditions that can increase your risk for AFib.

### How is AFib diagnosed and treated?

A health care provider may recommend screening for AFib if you have symptoms or if you have certain risk factors for the condition. The provider may assess your family history of AFib and any prior history of heart disease. They may conduct a physical exam to check your heartbeat or to see whether you have swelling in your legs and feet.

Other common tests for AFib include:

- **An electrocardiogram (ECG/EKG)** to record your heart's electrical activity
- **Blood tests** for levels of, for example, potassium and thyroid hormones
- **An echocardiogram (echo)** to show the size and shape of the heart and how well it pumps blood
- **Cardiac magnetic resonance imaging (MRI)** to see the structure of your heart's left atrium and how it's working

To treat AFib, your doctor may call for lifestyle changes such as limiting or avoiding alcohol and stimulants, quitting smoking, or increasing physical activity. Your doctor may prescribe medicine to treat AFib or prevent complications such as stroke. In rare cases, cardioversion (an electrical shock to the heart) may be used to restore the normal heart rhythm. A procedure called catheter ablation (when a thin, flexible tube is inserted through veins or arteries into the heart) may also be used to treat AFib. A doctor may recommend surgery to restore your heart's regular rhythm if other methods have not worked.

### NIH-funded research on AFib

#### The Rhythm Evaluation for Anticoagulation with Continuous Monitoring of Atrial Fibrillation Trial (REACT-AF)

This clinical trial will compare two treatments for preventing stroke in AFib. Researchers will test whether taking anticoagulant drugs (which prevent blood clotting) only when signaled by an AFib-sensing smartwatch is more effective than continuously taking them. If successful, this trial could lead to more individualized and cost-effective anticoagulant use in AFib patients. [Learn more about this research.](#)

#### Machine Learning in Atrial Fibrillation

Current therapies for AFib have limited success in part because researchers are not sure why a specific treatment works for a given patient. Machine learning (when a computer uses data to predict and perform processes without a person directly programming it) can improve our understanding of AFib. This project will use machine learning to recommend personalized therapies for patients with AFib. [Learn more about this research.](#) ■