CONDITION

Atrial fibrillation and atrial flutter

Learn how atrial fibrillation and atrial flutter affect heart rhythm, including symptoms, diagnosis, stroke risk, treatment, and follow-up.

WHAT IT IS
Abnormal rhythms beginning in the heart's upper chambers

BODY SYSTEM
Heart and circulation

MAIN SYMPTOMS
Irregular heartbeat, tiredness, shortness of breath, dizziness

WHAT CAUSES IT
Abnormal heart electrical signaling, sometimes unknown

HOW IT IS DIAGNOSED
ECG or portable heart rhythm monitoring

MAIN TREATMENT
Anticoagulation and heart rate or rhythm control

CAN IT BE CURED?
No, rhythm can return after treatment

IS IT AN EMERGENCY?
Sometimes, with chest pain, fainting, severe breathing difficulty, or stroke symptoms

LONG-TERM OUTLOOK
Rhythms can recur and stroke risk persists

Overview

Atrial fibrillation, often called AFib or AF, and atrial flutter are abnormal heart rhythms that begin in the upper chambers of the heart, called the atria.

In atrial fibrillation, electrical signals move through the atria in a rapid, disorganized way. The atria quiver instead of squeezing normally. The heartbeat is usually irregular and may also be fast.

In atrial flutter, an electrical signal travels repeatedly around a pathway in the atria. This creates a rapid but more organized rhythm. The pulse may be regular or irregular, depending on how many electrical signals reach the lower chambers of the heart.

Both conditions can occur in brief episodes, return from time to time, or continue for long

periods. Some people have atrial fibrillation and atrial flutter at different times.

These rhythms matter because they can reduce how efficiently the heart pumps. They can also allow blood to pool in the atria, where a blood clot may form. If a clot travels to the brain, it can cause a stroke. Stroke prevention is therefore an important part of care, even when symptoms are mild or absent.

Treatment depends on symptoms, heart health, how long the rhythm has been present, and the person's risk of stroke and bleeding. The main goals are to prevent blood clots, control the heart rate, restore or maintain a normal rhythm when appropriate, and manage conditions that make the rhythm more likely to return.

Symptoms

Some people have no symptoms. The rhythm may be found during a routine examination, a heart tracing, or monitoring for another reason.

When symptoms occur, they may include:

Symptoms can last for minutes, hours, or longer. Their intensity does not always show how serious the rhythm is. A person with few symptoms may still have a meaningful stroke risk.

Contact a healthcare professional promptly if you develop new or recurring palpitations, unexplained shortness of breath, unusual fatigue, or reduced exercise tolerance. This is generally appropriate for routine or timely medical assessment rather than emergency care if symptoms are mild and stable.

Call emergency services for chest pain or pressure, severe trouble breathing, fainting, or symptoms of a stroke. Stroke warning signs include sudden facial drooping, weakness or numbness on one side, difficulty speaking, confusion, loss of vision, severe loss of balance, or an unexplained severe headache. Do not drive yourself for emergency care.

- A racing, pounding, fluttering, or irregular heartbeat
- Tiredness or reduced ability to exercise
- Shortness of breath
- Lightheadedness or dizziness
- Chest discomfort
- Weakness, sweating, or anxiety
- A feeling that the heart is skipping beats

Causes and risk factors

Atrial fibrillation and atrial flutter develop when the heart's electrical system no longer directs each heartbeat normally. Sometimes there is no single identifiable cause.

The likelihood increases with age and with conditions that stretch, inflame, scar, or place extra pressure on the atria. Important risk factors include:

Atrial flutter may develop around areas of scar tissue, including scars from previous heart surgery or ablation. Typical atrial flutter often follows a predictable electrical circuit in the right atrium. Other forms can involve different pathways.

An episode may appear during an acute illness, after surgery, or with major changes in fluid or mineral balance. Even if the rhythm settles after the immediate problem improves, follow-up may still be needed because it can return.

Alcohol can trigger episodes in some people. The effects of caffeine vary, and moderate caffeine intake has not been shown to trigger atrial fibrillation in everyone. It can be useful to discuss personal patterns rather than assuming that every palpitation has the same cause.

- High blood pressure
- Coronary artery disease or a previous heart attack
- Heart failure
- Heart valve disease
- Congenital heart disease
- Previous heart surgery
- Obesity
- Obstructive sleep apnea, which causes repeated pauses in breathing during sleep
- Diabetes
- An overactive thyroid
- Chronic kidney or lung disease
- Heavy alcohol use or binge drinking
- Smoking
- A family history of atrial fibrillation

Diagnosis

Diagnosis usually begins with a medical history, pulse check, and physical examination. A clinician will ask when symptoms began, how long they last, and whether exercise, alcohol, illness, sleep, or medicines seem related.

An electrocardiogram, or ECG, records the heart's electrical activity and can often distinguish atrial fibrillation from atrial flutter. Because episodes may come and go, a normal ECG between episodes does not always rule them out.

A portable monitor may record the rhythm for a day, several days, or longer. Some monitors are worn continuously. Others record when symptoms occur or are placed under the skin for long-term monitoring. Data from a watch or other personal device can be helpful, but a clinician may need to review the tracing and confirm the diagnosis.

An echocardiogram uses sound waves to show the heart's chambers, valves, movement, and pumping strength. Blood tests may check thyroid function, blood cell counts, kidney and liver function, and levels of minerals involved in heart rhythm.

The evaluation also includes estimating stroke risk. Clinicians commonly use a structured risk score that considers factors such as age, high blood pressure, diabetes, heart failure, vascular disease, and a previous stroke or transient ischemic attack. Bleeding risk, other medicines, kidney function, and personal preferences are reviewed before choosing treatment.

Treatment and management

Treatment is individualized. A person who is medically unstable because of the rhythm may need immediate electrical cardioversion, which uses a controlled shock to restore a normal rhythm. Most people are stable enough for a planned discussion of treatment options.

Preventing blood clots and stroke

An anticoagulant like warfarin or apixaban is a medicine that reduces the blood's ability to clot. It may be recommended when stroke risk is high enough to outweigh the risk of serious bleeding.

Available choices include direct-acting oral anticoagulants and warfarin. The best option depends on factors such as heart valve conditions, kidney function, interactions with other medicines, cost, and the ability to take the medicine consistently. Aspirin is not an equivalent substitute for anticoagulation when an anticoagulant is indicated.

Anticoagulants can increase bleeding. People taking them should tell clinicians and dentists before procedures and check before starting nonprescription medicines or supplements. They should not stop an anticoagulant without medical guidance, even if the heart rhythm seems normal.

For selected people who cannot take long-term anticoagulation, a procedure that closes or blocks the left atrial appendage may be considered. This small pouch in the left atrium is a common site of clot formation in atrial fibrillation.

Controlling the heart rate

Rate-control treatment slows the signals reaching the lower chambers. Common medicine groups include beta blockers and certain calcium channel blockers like amlodipine or diltiazem . Digoxin is used in some situations.

The goal is to reduce symptoms and prevent the heart from remaining too fast for too long. Choice of medicine depends on blood pressure, heart pumping strength, activity level, other illnesses, and possible side effects.

Restoring or maintaining rhythm

Rhythm-control treatment aims to restore normal rhythm and reduce future episodes. It may include cardioversion, antiarrhythmic medicine, or catheter ablation.

Cardioversion can be performed with a controlled electrical shock or, in some cases, medicine. Because cardioversion can dislodge an existing clot, clinicians consider how long the abnormal rhythm has been present and whether anticoagulation or imaging of the atria is needed before the procedure.

Antiarrhythmic medicines affect the heart's electrical activity. The choice requires medical supervision because these medicines have different effects and monitoring needs.

During catheter ablation, thin tubes are passed through blood vessels to the heart. Energy is used to treat the tissue causing or supporting the abnormal rhythm. For atrial fibrillation, treatment often targets electrical signals near the pulmonary veins. Typical atrial flutter can often be treated by interrupting its electrical circuit. Ablation can reduce symptoms and rhythm episodes, but follow-up remains important.

Reducing future risk

Managing related health conditions is part of rhythm care. This may include controlling blood pressure and diabetes, treating sleep apnea, reaching a sustainable weight, exercising regularly, avoiding tobacco, and limiting or avoiding alcohol when it contributes to episodes. Exercise plans should match the person's health and symptoms.

Medicines commonly used for this include dofetilide . Which one suits you, if any, is a decision for you and your doctor.

Complications

Stroke is one of the most serious complications. A clot formed in the atrium can travel to the brain and block an artery. Stroke risk varies from person to person and is not determined only by how often symptoms occur.

A persistently rapid heartbeat can weaken the heart muscle. This is called tachycardia-induced cardiomyopathy. Heart function may improve when the rate or rhythm is brought under control.

Atrial fibrillation and atrial flutter can also worsen existing heart failure. Fluid buildup may cause increasing breathlessness, leg swelling, rapid weight gain, or difficulty lying flat.

Other possible effects include reduced exercise capacity, sleep problems, anxiety about unpredictable episodes, and repeated emergency visits or hospital stays. Treatment aims to reduce these effects as well as prevent stroke.

Follow up

Follow-up is needed even when symptoms improve. The rhythm can return without being felt, and stroke-prevention decisions are not based only on whether a person currently notices an irregular heartbeat.

At routine visits, the care team may review:

After cardioversion or ablation, follow the specific plan for medicines and rhythm monitoring. Do not stop anticoagulation or other heart medicines solely because a home monitor reports a normal rhythm.

Seek timely medical advice for increasing palpitations, worsening exercise tolerance, new swelling, repeated dizziness, or possible medicine side effects. Unusual bleeding while taking an anticoagulant also needs medical review.

Call emergency services for severe breathing difficulty, fainting, chest pressure, stroke symptoms, vomiting blood, coughing up blood, or heavy bleeding that will not stop. A serious head injury while taking an anticoagulant also warrants urgent assessment, even if symptoms initially seem mild.

- Heart rate, rhythm, blood pressure, and symptoms
- Stroke and bleeding risks
- Anticoagulant use, adherence, interactions, and side effects
- Kidney or liver tests when relevant to medicine safety
- The effectiveness and side effects of rate- or rhythm-control treatment

- Blood pressure, weight, sleep apnea, alcohol use, and other modifiable risks

Sources

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