

# IRREGULAR HEARTBEAT



Atrial fibrillation (AF) is an irregular heartbeat caused by a failure of the heart's natural pacemaker

The heart is essentially a large muscle that contracts and relaxes in a regular fashion, pumping blood throughout the body supplying oxygen and nutrients to organs and tissues. Contraction of the heart, and the subsequent flow of blood through arteries, is known as a "heartbeat." This beat can be felt as a "pulse" in the arteries, most felt by medical professionals in the arteries of the neck (carotid pulse), or at the wrist (radial pulse.) A normal heartbeat is regular, meaning that the time between pulses is roughly the same. A regular pulse means that the heart is beating regularly, and this is the most effective way of pumping blood.

## WHAT IS AN IRREGULAR HEARTBEAT?

An irregular heartbeat is when the time between heart contractions (and then effectively the pulse) varies and is, irregular. There are many reasons why a heartbeat may be irregular. An irregular heartbeat needs to be evaluated by a doctor to make a diagnosis, as whilst some causes can be completely harmless, other conditions could potentially be serious. Irregular heartbeats are part of a group of conditions which affect the heart, called "arrhythmias." Arrhythmias also include conditions where the heart beats too quickly (tachycardias) and too slowly (bradycardias).

## CAUSES OF AN IRREGULAR HEARTBEAT

The most common causes of an irregular heartbeat include:

1. Sinus arrhythmia: A normal condition, most prominent in children, where the heart beats quicker whilst breathing in, and slows down when breathing out. This does not require treatment.

2. Extra-systoles (extra beats): This condition, which has several sub-variants, occurs when the heart produces a beat prematurely. An "extra" pulse is felt rather quickly after the previous pulse, followed by a slightly longer pause. Often patients will say that their heart has "missed a beat" but this is because they have not noted the "extra beat" and only noted the long pause after the extra beat. In most cases, this also does not require treatment and is often without symptoms.
3. Atrial Fibrillation: The commonest arrhythmia affecting particularly the elderly but can occur at any age. Atrial Fibrillation (commonly abbreviated as "A.F.") occurs when the top chambers of the heart fail to contract, and merely quiver (or fibrillate). The bottom chambers react to the quivering of the top chambers by contracting randomly, resulting in an irregular pulse. Atrial Fibrillation may be associated with heart valve problems, acute illness (e.g., infections), thyroid disease, certain medication use, stimulant use (e.g. excessive caffeine and other stimulant recreational drugs and even excessive exercise (e.g. during extreme sporting events.)
4. Heart Disease: Coronary artery disease, heart valve disease and heart failure can all cause an irregular heartbeat.

## SYMPTOMS OF AN IRREGULAR HEARTBEAT

Some people with an irregular heartbeat may not experience any symptoms, while others may experience the following:

1. Palpitations: A sensation of fluttering or pounding in the chest.
2. Shortness of breath: Difficulty breathing, especially during physical activity.
3. Dizziness or light-headedness: Feeling faint or dizzy.
4. Chest pain: A feeling of discomfort, pressure, or pain in the chest.
5. Fatigue: Feeling tired or exhausted.

If you experience any of these symptoms, it's important to talk to your doctor.

## SYMPTOMS OF AN IRREGULAR HEARTBEAT

If you suspect that you have an irregular heartbeat, your doctor will perform a physical examination and take a detailed history. The examination will include feeling your pulse, taking a blood pressure reading and carefully listening to your heart and lungs using a stethoscope. Your doctor may perform the following tests:



1. Electrocardiogram (ECG): A test that records the electrical activity of the heart.
2. Holter ECG monitor: A portable ECG device that records the heart's electrical activity over an extended period, often 24-hours or more.
3. Echocardiogram (or "Echo"): A test that uses ultrasound waves to create a picture of the heart, which can accurately diagnose heart failure and heart valve problems, amongst others.
4. Stress ECG test: A test that measures the heart's response to physical activity.
5. Blood tests to check for high medication levels, or thyroid disease.
4. Avoid smoking: Smoking damages the blood vessels and increases the risk of heart disease, which can lead to an irregular heartbeat. Quitting smoking can significantly improve heart health<sup>6</sup>.
5. Manage stress: Chronic stress can contribute to heart problems, including irregular heart rhythms. Engage in stress-reducing activities such as exercise, meditation, or hobbies to promote a healthy heart and overall well-being<sup>6</sup>.

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**Please note:** this is an education information leaflet only and should not be used for diagnosis. For more information on **Irregular Heartbeat**, consult your healthcare professional.

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## TREATMENT OF AN IRREGULAR HEARTBEAT

The treatment of an irregular heartbeat depends on the underlying cause and the severity of the condition. Some treatment options include:

1. **Lifestyle changes:** Lifestyle changes such as quitting smoking, reducing alcohol and caffeine intake, and managing stress can help prevent or manage an irregular heartbeat.
2. **Medications:** Medications such as beta-blockers, calcium channel blockers, and anti-arrhythmic drugs can be used to control the heart rate and rhythm.
3. **Cardioversion:** A procedure that uses electrical shocks to restore the heart's normal rhythm.
4. **Ablation:** A procedure that freezes or "burns" the heart tissue that's causing the irregular heartbeat.
5. **Pacemakers:** A device that's implanted under the skin to regulate the heart rate.

## TREATMENT OF AN IRREGULAR HEARTBEAT

While some causes of an irregular heartbeat cannot be prevented, there are steps you can take to reduce your risk:

1. Maintain a healthy lifestyle: Eat a balanced diet, exercise regularly, and maintain a healthy weight. These habits contribute to overall heart health and reduce the risk of heart disease, a common cause of an irregular heartbeat<sup>3</sup>.
2. Manage underlying health conditions: If you have conditions like high blood pressure, diabetes, or high cholesterol, work with your healthcare provider to manage them effectively. Keeping these conditions under control can reduce the risk of developing an irregular heartbeat<sup>3</sup>.
3. Limit alcohol and caffeine intake: Excessive alcohol and caffeine consumption can trigger irregular heart rhythms in some individuals. Moderation is key to maintaining a healthy heart<sup>6</sup>.

**References:** 1. American Heart Association. (2022). Arrhythmia. Retrieved from <https://www.heart.org/en/health-topics/arrhythmia> 2. Cleveland Clinic. (2021). Irregular heartbeat (arrhythmia). Retrieved from <https://my.clevelandclinic.org/health/diseases/17076-arrhythmia> 3. Mayo Clinic. (2021). Arrhythmia. Retrieved from <https://www.mayoclinic.org/diseases-conditions/arrhythmia/symptoms-causes/syc-20350668> 4. National Heart, Lung, and Blood Institute. (2021). Arrhythmia. Retrieved from <https://www.nhlbi.nih.gov/health-topics/arrhythmia> 5. Tachjian, A., Maria, V., & Jahangir, A. (2021). Atrial fibrillation. In StatPearls [Internet]. StatPearls Publishing. Retrieved from <https://www.ncbi.nlm.nih.gov/books/NBK470475/> 6. Centers for Disease Control and Prevention. (2021). Atrial fibrillation. Retrieved from [https://www.cdc.gov/heartdisease/atrial\\_fibrillation.htm](https://www.cdc.gov/heartdisease/atrial_fibrillation.htm) 7. Heart Rhythm Society. (2022). Atrial fibrillation. Retrieved from <https://www.hrsonline.org/arrhythmia-resources/atrial-fibrillation> 8. National Institute of Neurological Disorders and Stroke. (2021). Stroke: Hope through research. Retrieved from <https://www.ninds.nih.gov/Disorders/Patient-Caregiver-Education/Hope-Through-Research/Stroke-Hope-Through-Research> 9. American College of Cardiology. (2021). Heart failure. Retrieved from <https://www.acc.org/patient-resources/heart-health-conditions/heart-failure>

