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Definition

Atrial fibrillation (AF) is a cardiac arrhythmia.

Watch the video by Sanofi, **An overview of atrial fibrillation**, which covers the definition of AF, signs and symptoms, causes/risk factors, prognosis and complications, and contains the following chapters:

- Chapter 1: Introduction to Atrial Fibrillation (from 0:00)
- Chapter 2: Symptoms and consequences of AFib (from 4:55)
- Chapter 3: Comprehensive AFib management (from 7:16)

Note that some of the terminology used in this video may differ from that used in the UK; for example, EKG, an electrocardiogram, is usually referred to as ECG, and AFib is more commonly referred to as AF.

Classifications of AF are covered in this video. More detail can be found by accessing the National Institute for Health and Care Excellence (NICE) clinical guidelines **Atrial Fibrillation: diagnosis and management [NG196]**¹ and **NICE clinical knowledge (CKS) Atrial Fibrillation Definition**.

We recommend that you work through the CPPE **Cardiac arrhythmias** e-learning programme. This programme aims to help you develop the therapeutic knowledge you need to support the clinical management of patients with cardiac arrhythmias. It provides you with an overview of the most common cardiac arrhythmias, and how they are identified and diagnosed in practice. A lot of the content focuses on AF treatment.

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Causes/risk factors

Atrial fibrillation (AF) is commonly associated with hypertension, coronary artery disease, and myocardial infarction. There multiple causes and risks factors for the development of AF, a list of these can be found by accessing the **NICE clinical knowledge (CKS) Atrial fibrillation: What causes it?**²

The following resources explore causes and risk factors of AF in more detail:

- NICE clinical knowledge summary (CKS) **Atrial fibrillation: What causes it?** provides more detail on the potential causes of AF
- European Society of Cardiology's (ESC) **2016 ESC Guidelines for the management of atrial fibrillation developed in collaboration with EACTS** cover cardiovascular and other conditions associated with AF in Section 7, *Detection and management of risk factors and concomitant cardiovascular diseases*
- **2020 ESC Guidelines for the diagnosis and management of atrial fibrillation developed in collaboration with the European Association of Cardio-Thoracic Surgery (EACTS)** (dgk.org)
- **The 2018 European Heart Rhythm Association Practical Guide on the use of non-vitamin K antagonist oral anticoagulants in patients with Atrial Fibrillation**
- American Heart Association (AHA), American College of Cardiology (ACC) and Heart Rhythm Society's (HRS) **2019 AHA/ACC/HRS focused update of the 2014 AHA/ACC/HRS Guideline the management of patients with atrial fibrillation** outlines clinical risk factors in Section 2.2.3.4. *Risk factors and associated heart disease.*

The British Heart Foundation's **Atrial fibrillation** booklet also offers a clear explanation of the possible cause of heart failure under, *What causes atrial fibrillation?*

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Prevalence and incidence

Atrial fibrillation (AF) is the most common sustained cardiac arrhythmia, with an estimated 1.4 million people have AF in England.³

Prevalence is higher in men (2.9 percent) than in women (2.0 percent).³

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Pathophysiology (mechanism of disease)

The **2016 ESC Guidelines for the management of atrial fibrillation developed in collaboration with EACTS** covers the pathophysiology of AF in Section 4.2 *Mechanisms leading to atrial fibrillation*, which looks at remodelling of atrial structure, ion channel function and electrophysiological mechanisms of atrial fibrillation.

The **2019 AHA/ACC/HRS focused update of the 2014 AHA/ACC/HRS Guideline for the management of patients with atrial fibrillation** Section 2 *Background and pathophysiology* covers the mechanisms of AF in terms of structural abnormalities, electrophysiological mechanisms, and pathophysiological mechanisms such as remodelling, inflammation and oxidative stress and the renin-angiotensin-aldosterone-system (RAAS).

Other helpful articles include:

- **Heart's Atrial Fibrillation: Classification, Pathophysiology, Mechanisms And Drug Treatment**, which explores established pathophysiological mechanisms, the classification of AF, and pharmacological treatment
- **European Journal of Human Genetics' Atrial fibrillation: the role of common and rare genetic variants**, which discusses the genetic basis of AF.

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Prognosis and complications

Those with AF are at a considerably greater risk of mortality – those with AF are nearly twice as likely to die prematurely as people in sinus rhythm.⁵ For more information about the prognosis for those with AF, access the NICE CKS **Atrial fibrillation – What are the complications and prognosis?**

As discussed in *An overview of atrial fibrillation*, in addition to causing breathlessness and fatigue, the main complication of AF is a five-fold increased stroke and thromboembolism risk.⁶

Other complications such as heart failure and reduced quality of life are discussed in the NICE CKS **Atrial fibrillation – What are the complications and prognosis?**

In the following video, we meet Eileen who talks about her experience of AF:

Arrhythmia Alliance - AF and quality of life



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Diagnosis/detection

Section 1, *An overview of cardiac arrhythmia*, of the CPPE **Cardiac arrhythmias** e-learning programme covers making a diagnosis of arrhythmias including history-taking examination and other investigations.

The NICE CKS **Atrial fibrillation - Diagnosis** covers when to suspect AF, diagnostic tests and differential diagnosis.

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Treatment

As explored in the *An overview of atrial fibrillation* video, the main pharmacological treatments for AF include rate control and rhythm control. Anticoagulation also needs to be considered.

Section 2, *Tachycardia and medicines optimisation in AF*, of the CPPE **Cardiac arrhythmias** e-learning programme covers evidence-based choices of anticoagulation, rate control and rhythm control.

For more learning specific to anticoagulation access the Northern Ireland Centre for Pharmacy Learning and Development (NICPLD) **Cardiovascular disease: anticoagulation** e-learning programme, which is available through the CPPE website. It is designed to equip you with the knowledge to deliver a safe and supportive service to patients who are prescribed anticoagulants including the newer oral anticoagulants.

The NICE CKS **Atrial fibrillation - Scenario: management of AF** also covers *Managing underlying causes of AF*.

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Patient support

Section 4, *Supporting patients*, of the CPPE **Cardiac arrhythmias** e-learning programme covers how to communicate with patients about arrhythmias and supporting patients to self-care.

Within this section there are links to the **Arrhythmia Alliance** and the **British Heart Foundation** websites, which contain information and support for those with AF.

NICE offers ***Atrial fibrillation, Information for the public.***

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Further resources

The NICE CKS ***Atrial fibrillation*** offers a summary of the current evidence base and practical guidance on AF.

The 2018 European Heart Rhythm Association ***Practical Guide on the use of non-vitamin K antagonist oral anticoagulants in patients with atrial fibrillation.***

CPPE materials

The CPPE ***Atrial fibrillation and arrhythmias*** gateway page links to NICE guidance, consultation skills learning, and CHADSVASC and ORBIT bleeding risk score.

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External websites

CPPE is not responsible for the content of any non-CPPE websites mentioned on this page or for the accuracy of any information to be found there.

All web links were accessed on 27 January 2021.

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References

1. National Clinical Guideline Centre. **Atrial Fibrillation: diagnosis and management [NG196]**. June 2021.
2. National Institute for Health and Care Excellence. Clinical knowledge summary. ***Atrial fibrillation: What causes it?***. May 2021.
3. National Institute for Health and Care Excellence. Clinical knowledge summary. ***Atrial fibrillation. Prevalence.*** May 2021.
4. National Clinical Guideline Centre. ***Atrial fibrillation: diagnosis and management [NG196]***. June 2021.
5. National Institute for Health and Care Excellence. Clinical knowledge summary. ***Atrial fibrillation. Prognosis.*** May 2021.
6. National Institute for Health and Care Excellence. Clinical knowledge summary. ***Atrial fibrillation. Complications.*** May 2021.

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