

# Living with syncope

**A practical guide  
for patients  
and their families**



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for patients  
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by  
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## Introduction

Syncope is a temporary loss of consciousness. It is a very common symptom and may be experienced by anyone, whether young or old, healthy or sick. Episodes of syncope can be divided into four groups according to the cause of the loss of consciousness: neuromediated syncope (the most frequent type, has a benign prognosis), orthostatic syncope, cardiac syncope and cerebrovascular syncope. We are all likely to experience at least one episode of neuromediated syncope during our lifetime.

When syncope is not related to heart disease, the prognosis is generally benign. However, if a patient is suffering from heart disease, syncope may be a premonitory symptom of a fatal event, such as heart attack or even sudden death. It is therefore important not to underestimate the clinical meaning of the symptom, especially in patients affected by heart disease, in older individuals and in those who have a history of cardiovascular diseases and/or sudden death in their families.

When treating syncope episodes, counselling plays a very important role. In most cases, the treatment of neuromediated and orthostatic syncope essentially involves reassuring both the patient and his/her relatives, and providing useful suggestions for everyday life. A patient with syncope must not therefore be regarded as a passive object of treatment, but rather as an active partner who collaborates positively with the doctor during all diagnostic and therapeutic

procedures. It is therefore important to provide patients (and their relatives) with accurate information and detailed advice on the following key points: What are the risks related to the different types of syncope? What tests are used to study syncope and what do they consist of ? How can we prevent and/or interrupt syncopal episodes? How should we behave during and after a syncopal episode? This means that doctors who are treating syncope patients do not only prescribe medicines and tests but also advise their patients.

The aim of this guide is to help the doctor and the patient to draw up a plan together in order to cope with syncope. To achieve this, the guide has been written in simple language which every one can understand, and takes the form of a dialogue between a doctor and a patient. Several figures have been included in order to make the explanations clearer.

Franco Giada

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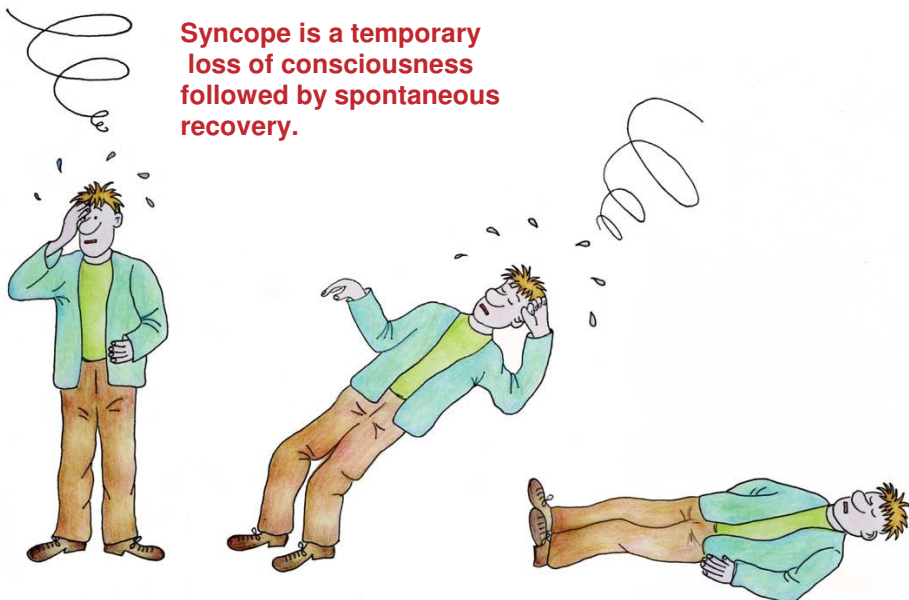
## General information

### *What does syncope mean? What is fainting?*

Syncope, or fainting, is a temporary loss of consciousness, followed by spontaneous and generally rapid recovery (within a few minutes); the person usually falls to the ground.

### *What does pre-syncope mean?*

Pre-syncope is the combination of sensations felt just before an episode of syncope (e.g. light-headedness, dizziness, visual disorders), but not followed by a real loss of consciousness.



### *What mechanism is responsible for syncope?*

Syncope is caused by a temporary, overall decrease in the blood flow to the brain. Some conditions, such as epilepsy, hypoglycaemia (low blood sugar levels) or psychiatric disorders, can completely or partially alter the state of consciousness, and therefore mimic a syncopal episode. In such cases, however, the alteration of consciousness is not due to a decrease in the amount of blood flowing to the brain, but to different mechanisms (so-called non-syncopal loss of consciousness).

### *What causes syncope?*

Syncopal episodes can be divided into 4 groups, according to the cause of the reduced blood flow to the brain:

- neuromediated syncope;
- orthostatic syncope;
- cardiac syncope;
- cerebrovascular syncope.

### *How often does syncope occur?*

It is a very frequent symptom, both in patients suffering from heart diseases and in the general population. The frequency increases in proportion to the age. In Europe and other industrialised countries, syncope is responsible for 1-2% of visits to the Emergency Unit and 1-2% of total hospitalisations in.

**Syncope is a very frequent symptom which can affect anyone**



## Neuromediated syncope

### *What does neuromediated syncope mean?*

Episodes of neuromediated syncope are caused by a temporary “malfunction” of the autonomic nervous system (the part of the central nervous system that cannot be controlled by our will), which is responsible for regulating the arterial blood pressure and the heart rate.

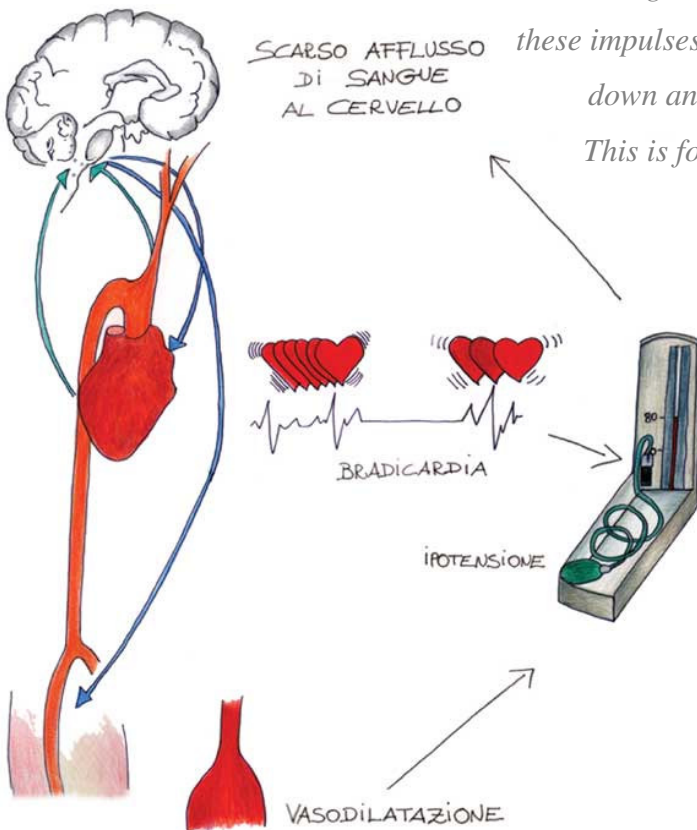
### **The mechanism responsible for neuromediated syncope episodes.**

*Nerve impulses start from the heart or from other internal organs and reach the autonomic nervous system, where they give rise to other impulses.*

*On returning to the heart and blood vessels,*

*these impulses cause the heartbeat to slow down and the blood vessels to dilate.*

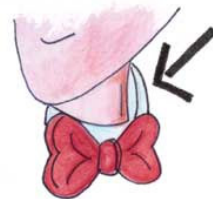
*This is followed by a significant drop in pressure, which reduces blood flow to the brain and causes syncope.*





### **A shock can cause vasovagal syncope**

This temporary black-out, which is usually due to an abnormal or excessive nerve reflex, causes peripheral blood vessels to dilate as the heart rate slows down. As a result, the arterial blood pressure drops sharply and blood flow to the brain is reduced. This lowers the level of vigilance of the brain and, if prolonged, can lead to a loss of consciousness.



**Extreme neck rotation can cause carotid sinus syncope.**

*How many types of neuromediated syncope episodes exist?*

Episodes of neuromediated syncope include vasovagal syncope episodes (also called common faint), sinus-carotid syncope episodes and situational syncope episodes. Vasovagal syncope may be caused by various types of stimulation, such as shocks, the sight of blood, and extended orthostatism (i.e. standing for a long time). Carotid sinus syncope is caused by stimulation of the carotid sinus – a part of the carotid artery in the neck responsible for regulating arterial pressure. Finally, situational syncope is related to specific situations such as defecating, urinating, swallowing, coughing, sneezing, and eating a heavy meal.



**A violent sneeze  
can cause**

### *How often does neuromediated syncope occur?*

Neuromediated syncope is the most frequent type of syncope. It affects people of any age, including young and healthy subjects. However, in most cases, episodes are occasional and patients rarely experience more than a few in their lifetime. Moreover, once the diagnosis has been made and the patient has been reassured that the prognosis is benign, the episodes often tend to disappear.

**Syncope episodes can lead to severe injury.**



*What are the future prospects for a patient with neuromediated syncope?*

Episodes of neuromediated syncope do not involve a risk of death or of developing other diseases. However, they can result in injury – sometimes serious. In patients with very frequent symptoms, they can also impair quality of life, as patients may become anxious or depressed, and seriously limit their working activities and relationships.

*What treatment is there for neuromediated syncope episodes?*

In most cases, simple changes in behaviour (as described below) are enough to control symptoms. Few patients require specific treatments; these include special medicines and/or pacemaker implantation.

**Frequent syncope episodes can cause anxiety and depression.**



## Orthostatic syncope episodes

### *What does orthostatic syncope mean?*

When a person is standing, arterial blood pressure tends to decrease because of the effect of gravity. Orthostatic syncope episodes are caused by the inability of the nervous system to maintain the proper arterial pressure levels when the patient is standing. As the brain does not receive enough oxygenated blood, syncope occurs. Usually, the pressure fall responsible for a syncope episode occurs in the first few minutes after the person has changed his/her position from lying down to standing. Sometimes, a complete loss of consciousness does not occur, but the patient feels unwell, exhausted, “weak at the knees” and has difficulty in standing.

Orthostatic syncope episodes are caused by primary diseases (e.g. Parkinson’s disease) or secondary diseases (e.g. diabetes) affecting the autonomic nervous system, or by a reduction in the amount of liquid in circulation (e.g. in the case of anaemia and dehydration).

*How often does orthostatic syncope occur?*

This type of syncope is frequent above all in older subjects affected by various diseases and treated with several medicines. Disorders concerning orthostatic low blood pressure tend to persist and to worsen.

*What are the future prospects for a patient with orthostatic syncope?*

Episodes of orthostatic syncope do not involve an increased risk of death but can result in injury and impair the patient's quality of life.



**Many medicines can favour syncope episodes.**

*What treatment is there for orthostatic syncope episodes?*

This consists of treating of any related diseases and of making some simple changes in behaviour (as described below). In some cases, specific medicines are required.

## Cardiac syncope episodes

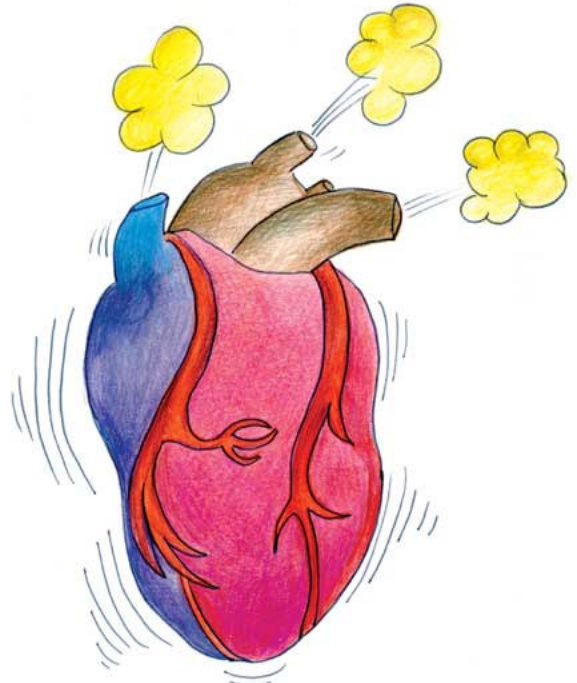
### *What does cardiac syncope mean?*

Cardiac syncope is the loss of consciousness that occurs when the heart is unable to pump enough blood to the brain because of a heart rhythm disorder or a structural heart disease.

### *How many types of cardiac syncope episodes exist?*

Cardiac syncope episodes are caused by alterations of the heart beat (*arrhythmic cardiac syncope episodes*) or by structural heart or lung diseases (*structural cardiac syncope episodes*).

Arrhythmic syncope is caused by an abnormal decrease (bradycardia) or excessive increase (tachycardia) in heart rate, while structural syncope is caused by diseases affecting the heart muscle, the heart valves or even pulmonary blood vessels.



**Cardiac syncope episodes occur when the heart is unable to pump the required amount of blood to the brain.**

### *How often does cardiac syncope occur?*

In general, this type of syncope is frequent in cardiac patients. People with an apparently healthy heart rarely experience cardiac syncope.

### *What are the future prospects for a patient with cardiac syncope?*

Episodes of cardiac syncope have a poor prognosis if they are not properly recognised and treated. When cardiac patients experience a syncopal episode, they must immediately inform their doctor. Their life may depend on it.

### *What treatment is there for cardiac syncope episodes?*

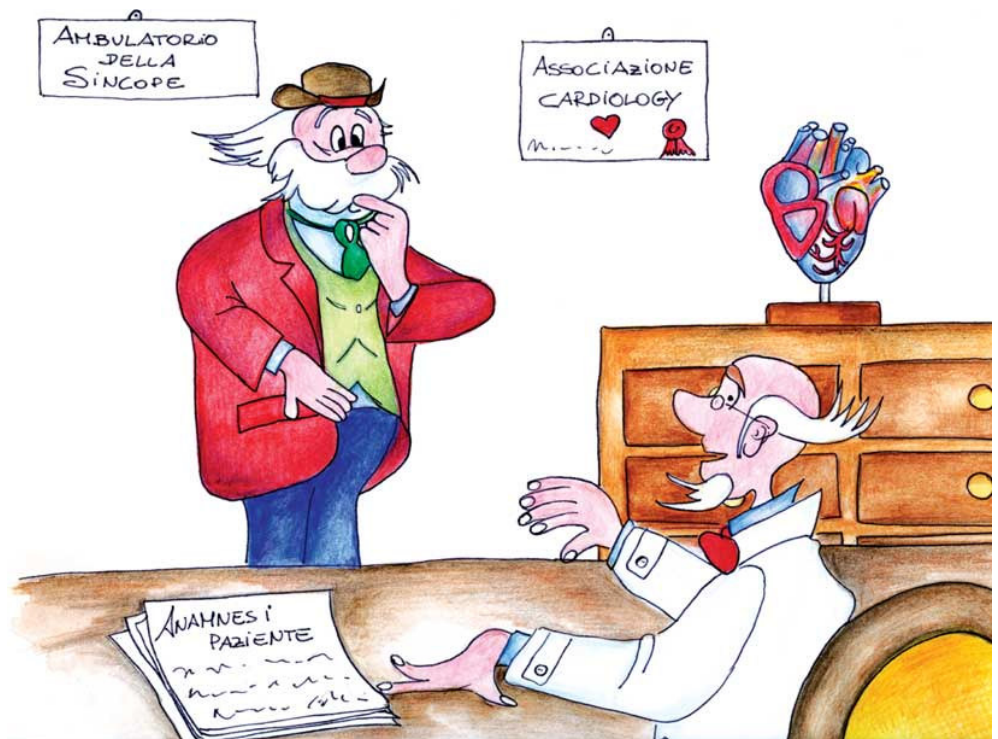
Treatment for cardiac syncope episodes has improved significantly and, according to the type of syncope (arrhythmic or structural syncope), includes administration of medicines, the implantation of a pacemaker or defibrillator, surgery for valve replacement, etc.

# Cerebrovascular syncope episodes

## *What does cerebrovascular syncope mean?*

Cerebrovascular syncope is a very rare loss of consciousness caused by diseases of the blood vessels in the brain, such as the so-called “brachial-basilar insufficiency syndrome”. Treatment for this type of syncope includes the administration of medicines and/or surgery on the affected vessels.

**Check-ups are very important in assessing patients with syncope.**



## How to diagnose syncope

### *How do doctors discover the cause of syncope?*

As already explained, syncopal episodes have various causes and the prognosis may be very different. It is very important to find out what the real cause of the patient's syncope is, not only in order to anticipate future developments, but also to decide what the right treatment should be.

The diagnosis is based on an initial clinical evaluation and, if this is not sufficient, on specific instrumental tests. The initial evaluation involves investigating the case history, examining the patient and measuring the arterial blood pressure during clinostatism (i.e. lying down) and orthostatism (i.e. standing), and taking an electrocardiogram. To have a complete picture of the patient, it is necessary to gather detailed information about how syncope occurred and about the patient's clinical history. Above all, it is important to find out whether there is a history of sudden death in the patient's family, whether he/she is affected by a cardiac disease and what drug treatment he/she is currently on.

### ***What does syncope of unknown origin mean?***

In a considerable percentage of patients (about 20%), it is not possible to diagnose the cause of the syncope precisely, even after completing sophisticated instrumental tests. In such cases, syncope is called syncope of unknown origin. If no cardiac diseases are discovered, the prognosis is generally benign, as for neuromediated syncope.

### ***What tests are mainly used to study syncope episodes?***

The tests most frequently used to study syncope episodes are described below:

*Electrocardiogram.* This helps to pick out any possible cardiac abnormalities, especially heart rhythm disorders. It is a simple, cheap and extremely useful test which should be carried out on all patients who have had an episode of syncope.

*Arterial pressure measurement in clinostatism and orthostatism,* this shows how the arterial blood pressure behaves when a person changes position from lying down to standing. It is used to diagnose orthostatic syncope.

*Carotid sinus massage,* this involves exerting temporary (for 5-10 seconds) manual pressure on the neck arteries (first on the right and then on the left). It is used to diagnose carotid sinus syncope.

**Tilt testing.** Tilt testing (or tilting table test) reproduces the circulatory conditions responsible for the activation of the autonomic nervous reflex on which vasovagal syncope is based. The aim of the test is therefore to reproduce the spontaneous syncope of the patient in the laboratory, in order to diagnose vasovagal syncope.

**Tilt testing is an important test in establishing the neuromediated origin of syncope episodes.**

