

Fainting Events or Syncope may be classified as follows:-

### Vasovagal Events

The common faint is known as a 'vasovagal' event, and is normally due to a fall in blood pressure, generally caused by a painful or emotional event. This form of fainting may follow triggering factors such as pain, nausea or seeing blood. The faint is not sudden, and normally the person has time to sit down after becoming dizzy, warm and/or sweaty. This type of fainting is not normally caused by abnormal heart function or disease.

### Postural faint

This occurs when changing from a lying or seated position to a standing position. The patient feels momentarily weak and dizzy and has to support themselves for a few seconds.

### Heart Rhythm (arrhythmia) disorders

Fainting may occur if the heart rate is slow; e.g. 30bpm or below, or is fast; 180bpm or above. Fainting may also be caused by a rapid chaotic rhythm where the heart takes a few seconds before it can regain the normal rhythm. This can happen in normal healthy individuals but it is more likely to occur when there is an underlying heart disease such as Brugada and LQT Syndrome.

The heart rate may be corrected or improved with drug therapy but if these are not fully effective the use of a pacemaker or ICD may be required.

### What to do if someone faints

Ensure that the person who has fainted has a pulse and is breathing. If these are both present lay the person who has fainted flat and raise the legs slightly. Normally the person should regain consciousness in a little over a minute. If the person remains unconscious seek immediate medical help.

Immediate medical attention should also be given to a person who faints and has a known heart condition.

Information from a person witnessing the faint may be useful to determine the cause of the faint and to assess the duration of the loss of consciousness.

### Guidelines on Management (Diagnosis and Treatment) of Syncope.

1. Use patient history, physical examination, blood pressure and ECG to separate those with certain or suspected diagnosis from those with unexplained syncope.

2. There is no clear evidence that all unexplained syncope victims should be given echocardiography or stress testing, clinical evaluation may be sufficient. Further testing is necessary if there is a possibility of underlying heart disease.

In patients with structural heart disease, abnormal ECG or arrhythmia's, the use of Holter monitoring, electrophysiology testing or 24hr (loop) event monitoring should be considered. Loop monitoring is particularly suited to patients with low heart rates.

3. When there is no structural heart disease and there is a normal ECG, neurally mediated syndromes are the probable cause of syncope. Treatment of neurally mediated syncope is only recommended when syncope is recurrent or severe. A tilt table test using stimulants such as isoproterenol or nitroglycerine may help diagnose a patient with unexplained syncope.

4. Patients without heart disease who have a normal ECG and only very rare syncopal episodes are likely to have neurally mediated syncope. Rare episodes may have other causes such as seizures, supraventricular tachycardias, or bradycardias.

5. Syncope evaluation integrates clinical assessment with the results of diagnostic testing to arrive at a plausible diagnosis to explain the patient's symptoms. If the evaluation is negative it is often particularly useful to review the case history with the patient and obtain additional information from witnesses. Repeat physical examination findings and follow-up of subtle abnormalities may also prove valuable.

Patients should be admitted to hospital if rapid diagnostic evaluation is deemed necessary because of concerns about serious arrhythmias, sudden death and newly diagnosed cardiac disease (eg. Aortic stenosis, myocardial infarction). Most patients without heart disease can be effectively evaluated and treated as out patients.

Pacemakers may be a treatment option in patients with severe recurrent syncope and with a cardio-inhibitory response on tilt testing.

For neurally mediated syncope treatment can include tilt test training (tilting until patient is able to overcome syncope), pharmacological agents and dual chamber pacing.

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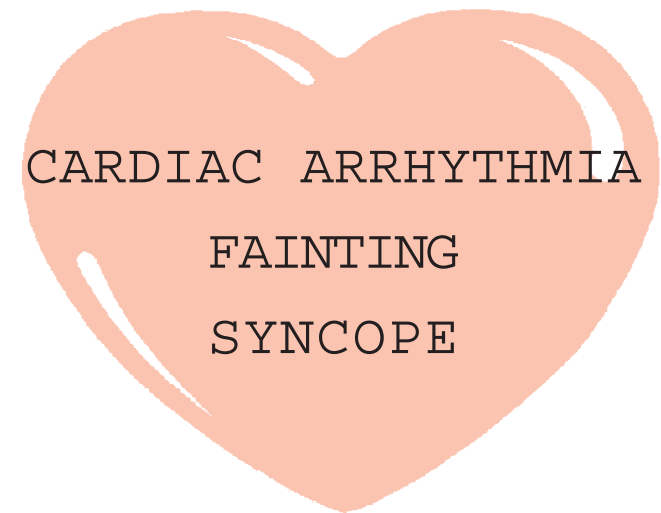
The primary purpose of this leaflet is for guidance;  
specialist advice should be sought regarding these conditions.

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**SADS UK**  
Supporting those affected  
by Cardiac Arrhythmia

DO YOU SUFFER  
FROM FAINTING SPELLS?



Heart (cardiac) Arrhythmias can cause fainting spells and possible sudden unexpected death (when associated with physical exertion or emotional stress) in children and young adults, but arrhythmias can be treated.

Ashley Jolly  
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Sudden Adult Death  
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## Fainting

Most people faint at some stage during their life so there is a readiness to assume that fainting is not a serious problem and thus most people would not contact their GP unless the fainting episodes occur regularly.

Normally the causes of a fainting episode are of little consequence and no further investigation is needed. On the other hand a fainting episode could be the first sign of a potentially serious condition in a person who would normally be considered to be fit and healthy. If a fainting episode is associated with any of the following unusual situations then medical advice should be sought regarding the possibility of having a heart condition :-

1. Fainting occurs during physical exertion.
2. Fainting with emotional stress or extreme anger.
3. Fainting with sudden noise or arousal from rest or sleep.
4. Fainting or appearance of seizing during sleep.

## Syncope

The medical term for fainting or loss of consciousness is 'syncope', the patient loses consciousness generally following symptoms of dizziness, light headedness, alterations in or loss of vision and sometimes extreme ringing in the ears or loss of hearing. Loss of muscle control will cause the patient to fall to the ground or slump if seated. There may be other symptoms such as an irregular or rapid heart rhythm (arrhythmia), sweating and nausea. Jerks and spasms may occur, these may look similar to an epileptic seizure but these movements are not associated with epilepsy.

An irregular, slow or rapid heart rhythm (arrhythmia) interferes with the pumping of blood by the heart resulting in the brain being deprived of an adequate flow of blood. Low blood flow decreases optimal oxygen level in the brain and loss of consciousness occurs. Fainting caused by an arrhythmia is usually sudden and without warning, it may occur during or shortly after exercise and is accompanied by gasping or absence of breath. Loss of consciousness can last from one to several minutes, in some cases resuscitation may be required.

## Abnormalities of the heart's electrical system (Electrophysiology)

There are several potentially dangerous conditions of the heart's electrical system that a fainting episode may give warning of,

these include the Brugada Syndrome and the Long QT Syndrome (LQT). Unfortunately in one third of the deaths caused by these two conditions, no previous symptoms warning of a possible heart condition will have been experienced.

**Brugada Syndrome** was first recognised in the early 90's, it is generally an inherited cardiac disease, wherein the heart structure appears normal but the patient suffers fainting episodes due to ventricular tachycardia or ventricular fibrillation. An ECG may indicate right bundle branch block with an elevated ST segment. In suspected Brugada Syndrome patients, administering an antiarrhythmic drug such as flecainide may provoke recognition of the bundle block when previous ECG appears normal. This genetic defect can be associated with a cardiac sodium channel ion mutation in a gene called SCN5A; presently additional genes causing Brugada Syndrome have not yet been identified.

Typical symptoms can be; chest pain, sweating and possibly rigidity or shaking of the limbs. Misdiagnosis of idiopathic epilepsy is sometimes made.

Although Brugada Syndrome can be found in people of most nationalities it is more prevalent in people of South East Asian origin.

**Long QT Syndrome** is a disorder involving the inward and outward movement of sodium, potassium and possibly other ions through the membrane of the heart cells, causing a prolongation of cardiac action potential, which is manifested on an ECG as an extension between the points labelled 'Q,R,S' & 'T'. The prolonged QT period delays cardiac repolarization (or time it takes for the ventricles of the heart to relax and prepare for the next beat) making the heart more vulnerable for serious heart rhythms to occur. Should the normal heart rhythm deteriorate into the chaotic and dangerous arrhythmia called Torsade de Pointes, the heart beats so rapidly that the blood flow is markedly reduced to the brain and causes the sudden faint, or cardiac arrest, without warning. This condition is usually inherited but it may be induced by several medications. Please consult the drugs-to-avoid list for medication precautions; [www.qtdrugs.org](http://www.qtdrugs.org), [www.torsades.org](http://www.torsades.org) or [www.azcert.org](http://www.azcert.org)

A history of unexplained fainting in children or young adults, especially during physical exertion, emotional stress, or a history of sudden death or an unexplained drowning or car accident within a family should provoke further investigation.

## Abnormalities of the structure of the heart (Cardiomyopathy)

Most structural (anatomical) heart disease such as leaking valves and muscle problems (cardiomyopathy) do not normally cause sudden loss of consciousness, they are normally associated with shortness of breath and fatigue. The exception to this is a disease causing thickening of the heart muscle (predominantly in the septum) called 'hypertrophic cardiomyopathy'; this cardiac disorder can also cause fainting.

The normal symptoms of Hypertrophic Cardiomyopathy are shortness of breath, fatigue, chest pain, light-headedness and fainting. The thickening of the septum muscle can cause an irregular heart beat (arrhythmia) called ventricular tachycardia or atrial fibrillation. These arrhythmias can also lead to fainting or sudden death without warning. Hypertrophic cardiomyopathy is the main cause of sudden death in young adults in the UK. Beta-blockers, calcium antagonists, anti-arrhythmic drugs, pacemaker or ICD are often needed as treatments.

## Other Causes

### Vertigo

If the patient has symptoms similar to those that cause fainting but the patient does not lose consciousness, then they should consider other problems such as vertigo. Vertigo is not generally associated with heart disease.

### Seizures

Seizures display similar symptoms to syncope but the loss of consciousness is generally longer, five minutes or more normally followed by a period of disorientation after the seizure. A seizure generally has no preceding symptoms but can sometimes be associated with stiffening of the muscles, shaking, tongue biting and loss of bladder control. The cause of seizures differs from that of syncope, the loss of consciousness is caused by abnormal electrical discharges in the brain, not by the loss of blood flow that is the cause of syncope.

It is possible for muscle spasms to occur following loss of consciousness, which can be mistaken for an epileptic seizure.