



Syncope Trust And Reflex anoxic Seizures®

www.stars.org.uk

Reflex Syncope (Vasovagal Syncope)



Working together with individuals, families and medical professionals to offer support and information on syncope and reflex anoxic seizures

www.stars.org.uk

Registered Charity No. 1084898

Glossary of terms

Reflex syncope A transient condition resulting from an abrupt dysfunction of the autonomic nervous system, which regulates blood pressure and heart rate

12-lead electrocardiogram (ECG) Used to record heart rhythms

Heart rhythm monitor A device used to record heart rhythms for up to a week whilst away from hospital

Implantable loop recorder (ILR) A small thin device inserted under the skin to record heart rhythms. The device can remain in place for up to three years. The ILR connects with home transmitter to send recordings to the hospital

Tilt table test An autonomic test used to induce an episode whilst connected to heart and blood pressure monitors

Blackout/Transient loss of consciousness (T-LOC) Without neurological deficit

Syncope T-LoC due to transient global impairment of cerebral perfusion

Epilepsy A condition that affects the brain and causes repeated seizures

Psychogenic blackouts A cause of apparent blackouts without evidence of syncope or epilepsy

Transient ischaemic attack (TIA) Caused by a temporary disruption in the blood supply to part of the brain (also known as a mini stroke)

Contents

What is reflex syncope?

What are the symptoms?

How do I obtain a diagnosis?

What should I do if I feel dizzy or faint?

What should my friends/family do if I faint?

What can I do to prevent syncope attacks?

Are there any other treatments?

Misdiagnosis



What is reflex syncope?

Syncope (sin-co-pee) is a medical term for a blackout caused by a sudden lack of blood supply to the brain. Reflex syncope is one of the most common forms of syncope, sometimes it is called neurally mediated syncope, or vasovagal syncope. Reflex syncope is usually the result of a transient disturbance of the mechanisms that maintain blood pressure and blood flow to the brain. In reflex syncope, blood that should be going to the brain is diverted elsewhere in the body, mostly to muscles. In an upright person, the brain quickly shuts down and consciousness is lost.

Autonomic sympathetic nerves pass from the brain to blood vessels that maintain blood pressure. In reflex syncope a poorly understood reflex suddenly withdraws the effect of these nerves, and blood pressure falls abruptly. Another part of this reflex involves the vagus nerve from the brain.

When the vagus nerve stimulates the heart, it slows down the number of beats per minute. The activation of the vagus nerve can be very abrupt, causing the heart to slow suddenly, or even stop. The longest period of time that a heart has stopped during reflex syncope is 86 seconds.

A fall in blood pressure and heart rate results in a fall in brain blood supply. At very low levels this can cause dizziness, visual disturbances and blackouts. These symptoms are most likely to be a problem when a person is upright (due to gravity further lowering blood pressure), but other factors such as food, heat, exercise, sight of blood and emotional stress can bring it on.

This booklet is designed for patients who have been diagnosed with reflex syncope and their carers.

It contains information on the diagnosis, treatment and management of reflex syncope.



It is very important to make sure syncope and epilepsy are distinguished from each other; syncope affects 50% of the population but only 0.5-1% are affected by epilepsy.

The reason for confusion is convulsive syncope. When the blood suddenly drains from the brain, the brain can be irritated by lack of oxygen and lack of glucose from the blood. A 'seizure' can result. A patient may have sudden loss of consciousness, twitching and jerking of the arms, legs and face, and even incontinence of urine or faeces. Patients may have an unusual warning just before, as in epilepsy, and may be confused afterwards, as in epilepsy. In syncope, it is common for people to look very pale, or 'like they had died'. In epilepsy they will not be pale, but if breathing is affected, a patient may go blue.

A blackout is too often assumed to be due to epilepsy. If you have any doubt, then please look at the STARS Blackouts Checklist which has been written specifically to help doctors and sufferers reach the correct diagnosis for an unexplained loss of consciousness.

What are the symptoms?

Symptoms vary from patient to patient, and from one faint to another but the most common symptoms are light headedness, dizziness, and nausea. Some people will feel very hot and clammy, sweaty and complain of visual and hearing disturbances. Many individuals become very pale. These symptoms are known as 'pre-syncope' and may or may not be followed by a complete blackout.

Some people, particularly older people get very little or no warning symptoms before blacking out.

Some symptoms of fainting may be complex, with no warning and jerking of limbs and even incontinence. Some individuals may take quite a while to come round. The symptoms of some faints can appear like a seizure or fit hence the confusion between reflex syncope and epilepsy. The important thing is that abnormal movements can occur in both syncope and epilepsy, and incontinence can occur in both.

How do I obtain a diagnosis?

Reflex syncope is not life-threatening, and with certain measures and sometimes medication, can be controlled. Fortunately the problems can improve with time. However, there are two important concerns. Firstly, some causes of syncope are not benign and can be very dangerous. These mostly occur in older patients but some children and young people can have electrical abnormalities of the heart that should not be overlooked and could be confused with reflex syncope if simple tests are not done. Some of the most important high-risk electrical diseases of the heart can be diagnosed or suggested by an ECG. Sometimes an echocardiogram is also helpful, but an ECG **MUST** be done in every patient with blackouts.

Obtaining a correct diagnosis can be achieved by consulting a doctor who is fully aware of the condition and takes a detailed history, a good description of the event by a witness and keeping a diary of events. Every patient who suffers a blackout should be given a 12-lead ECG.

- **12-lead electrocardiogram (ECG)** is done to check for any features on the resting ECG that might suggest a genetic, inherited or familial heart rhythm disorder, and for heart rhythm analysis.

Occasionally after getting the story and doing an ECG, other tests may be helpful. However, tests are not a substitute for these vital basics, and very rarely make a diagnosis on their own.

The following tests are sometimes also used to help doctors make a diagnosis:

- **Heart rhythm monitors** are used to record heart rhythms whilst away from hospital.
- **Implantable loop recorders (ILRs)** are used to monitor heart rhythms for months at a time if the episodes are less frequent than every two weeks. The device can remain in place for up to three years.
- **Tilt table test** is a test used to induce an attack while connected to heart and blood pressure monitors. Ideally, this test should be performed with other autonomic tests, as these aid diagnosis and also help in treatment, especially in advising on non-drug measures to prevent or reduce blackouts.



In some cases, it may be unclear whether the blackouts are due to syncope or epilepsy. In this case, you may be asked to see a neurologist. As before, it is the history that allows the neurologist to make a diagnosis of epilepsy. Occasionally, other tests such as an electroencephalogram (EEG), or a brain MRI scan may help. However, the diagnosis rests on the story and an ECG.

What should I do if I feel dizzy or faint?

Immediate action advice

- **Sit down** immediately, draw your knees up and put your head between your legs or
- **Squat** if you can
- **Squeeze**
 - In all cases do **clenching** exercises
 - Clench your fists tight, dig elbows against your side, squeeze your tummy muscles
 - If sitting, raise your heels and squeeze your calf muscles
 - If standing and stable on your feet, cross your legs and tighten all your leg muscles and clench your buttocks
- **Lie down** flat and put your legs in the air, for example against a wall, or ask someone to hold them up for you

This is the fastest way to get your blood pressure up and stop your symptoms.

When you feel well, get up cautiously. However, if you have further symptoms you may need to lie down again.

For mild symptoms, the 'Squeeze' exercises may be all you need.

What should my friends/family do if I faint?

1. Make sure the area is safe and remove any hazardous objects.
2. Carry out simple first aid checks (airway, breathing and circulation). It is sometimes hard to check a pulse if the patient has low blood pressure.
3. Do not attempt to sit the patient up, you should place them in the recovery position on their side (to aid breathing). If breathing is satisfactory, raise the legs to speed recovery.
4. Recovery is normally quite quick, however the patient may feel disorientated, weak or tired for a little while afterwards. The patient may benefit from being able to lie horizontally and getting up slowly.
5. If the patient does not regain consciousness in their normal recovery time, then they should be turned on their back with their legs raised. This will increase blood pressure and improve blood flow to the brain.
6. If recovery is slow, or if the patient feels different from how they normally feel after a faint, then they should seek medical assistance.

What can I do to prevent syncope attacks?

Long term prevention advice

Situations to avoid

- Avoid sitting or standing for long periods of time, for example on a bus, check-out queue or church, particularly in warm weather or hot environments. If you do have to stand still, then clench and unclench your calves or rock forward on the balls of your feet to encourage blood flow. If seated for long periods of time, for example while flying, raise your heels and squeeze your calf muscles frequently, fidgeting can be beneficial.
- Avoid lifting heavy objects or any type of strain on the body. This activity can send messages to slow down your heart rate and therefore lower your blood pressure.

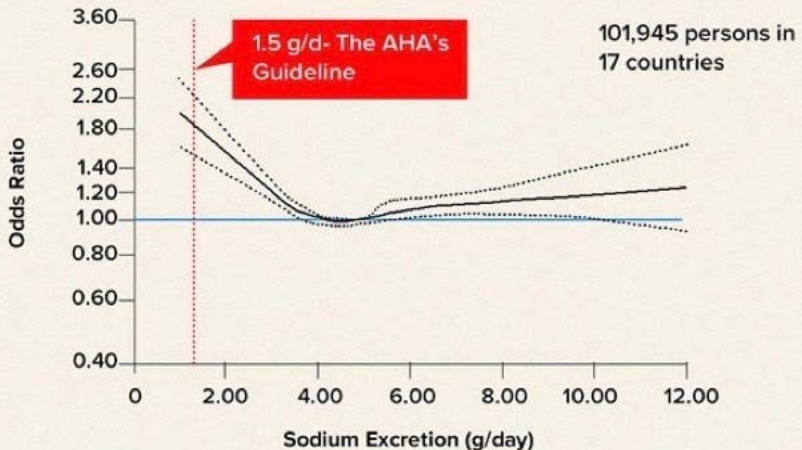
Fluid intake

- Increase the amount of water you drink. Try to drink 3-4 pints (1.5-2.0 litres) of water in the first few hours of the day, then enough to keep your urine clear. If your urine is yellow you need to drink more. Check with your doctor about fluid intake if you have other medical condition such as heart failure or kidney problems.

Diet

- Eat regular meals, including breakfast. Eat small meals often and avoid meals with large quantities of carbohydrates (bread, pasta, pastry). Increase your salt intake (only after discussion with your doctor, and never if treated for high blood pressure). Many people have taken away the message that the less salt you eat, the healthier you will be. This is now changing, as evidence is starting to emerge that cardiovascular mortality, from hearts attacks, strokes and heart failure, is higher if you take too much OR too little salt.

Estimated Sodium Excretion and Risk of Death or Cardiovascular Events



No. of Events	101	1,023	1,437	597	126	25
No. at Risk	1817	30,124	46,663	18,395	3885	756

Figure 1: Graph showing the risk of death plotted against salt intake showing that mortality rises with lower salt intake more steeply than with higher salt intake. The dotted lines indicate the statistical certainty of the findings.

- Caffeine may worsen syncope in some patients; you should try avoiding or limiting your intake of caffeine-containing drinks (coffee, tea and cola-type drinks) to see if this helps your symptoms.
- Avoid excess alcohol. Alcohol will make your symptoms worse. You may find that you can tolerate a small drink, but avoid drinking large amounts.

Exercise

- Improve muscle tone in your legs with regular exercise, this helps to return blood to your heart.

Medications

- Ensure you receive a regular review of your medications. Low blood pressure can be a side-effect of some medications. Once prescribed, medications should be **reviewed at least once a year** to ensure they are not the cause of the problems.

Posture

- Avoid sudden changes in posture. Bending or stooping suddenly may make your symptoms worse. Try to pause in between changes in position.
- Put two wooden blocks 2-3 inches high under the top feet of the bed. This means you will be lying slightly downhill. This reduced fluid loss during the night and 'trains' blood pressure reflexes to deal better with standing up for a long time.

Clothing

- Try to keep cool and wear loose layers of clothing which can be easily removed if you become hot.
- Wear high leg support tights during the day, but remove them before bed. Support tights prevent blood from pooling in your legs.

Are there any other treatments?

Very rarely, tablets may be prescribed for reflex syncope, but the majority of people manage their condition following the simple preventive advice previously described.

In some cases, where evidence has shown sudden falls in heart rate associated with fainting, a pacemaker may be of benefit.

For some patients who are able to identify the trigger to their attacks, cognitive behaviour therapy (CBT) may help to break a vicious circle of anxiety or similar type of problem.

Driving and reflex syncope

Most people with reflex syncope can continue to drive as long as:

- They have warning symptoms
- They do not have episodes while sitting or lying down
- They do not have another cause for their blackouts

Please ask your doctor and/or check with the DVLA if you are uncertain about your condition and driving. Please consult the DVLA for further information on the latest guidelines.

Flying and reflex syncope

Follow the preventive advice already discussed. Drink plenty of fluids during the flight, avoid alcohol, wear compression stockings, move around the cabin when you can and take evasive action quickly if you get symptoms. Ensure you contact your insurer using the term 'common faint' regarding your symptoms, particularly if you have frequent symptoms or are taking medication for reflex syncope. STARS can provide a list of insurers sympathetic to those with pre-existing conditions.

Misdiagnosis

A wrong diagnosis of epilepsy can be very damaging to a patient and their family. Unfortunately misdiagnosis of epilepsy in syncope is common. It is thought to occur in 20 – 30% of adults and 39% of children diagnosed with epilepsy. This represents about 125,000 people in the UK.

The All-Party Parliamentary Working Group on Epilepsy reported in September 2008 that there were at least 75,000 people wrongly diagnosed with epilepsy in England alone, and all were taking anti-epilepsy drugs that they didn't need to take.

Some epilepsy drugs can be harmful to foetuses but these are stopped when a woman decides to try for a baby and she is switched to another, safe anti-epileptic or if she becomes pregnant unexpectedly, then medication is changed as soon as she finds out.

If there are doubts about the diagnosis, a specialist opinion is essential and should be sought from an epilepsy specialist. If this expert believes the blackouts may be due to syncope then an individual should be referred to an electrophysiologist (heart rhythm expert) for assessment and diagnosis.

The cause of misdiagnosis is not completely clear, but fainting is often not 'simple', and has 'convulsive features'. These 'convulsive features' occur in generalised epilepsy, but also occur in some fainting.

Eye-witnesses and family may observe these features, and immediately assume wrongly that the blackout is caused by epilepsy. Careful clinical assessment is needed to separate epilepsy from 'convulsive syncope'.

Reflex syncope is also known as neurocardiogenic syncope, vasovagal syncope, neurally mediated syncope, common benign fainting, malignant vasovagal syncope and emotional fainting.

Many syncopal attacks only require reassurance from your GP

Many syncopal attacks require only explanation and reassurance from a GP or trained nurse regarding the likely absence of anything being seriously wrong.

Consultation with a specialist will be necessary, though, if the cause of the syncope remains uncertain or if there are particularly concerning symptoms or there is a family history of a heart condition.

ORDER YOUR PACK NOW!

STARS syncope and RAS Alert Cards are now available in packs of twenty.

They are popular with all ages because of the simple manner in which they inform and protect.

Just the size of a credit card, the STARS Alert Cards provide key information for new carers, work colleagues, family friends, schools and the general public and so help YOU!

To order, contact info@stars.org.uk 01789 867 503.



Syncope during pregnancy

If a woman wishes to have a child, then reflex syncope should not be considered a contraindication to pregnancy. There is no evidence that having reflex syncope (also known as vasovagal syncope) will harm you or your child during pregnancy.

It is, however, recommended that patients taking midodrine or ivabradine (or other such drugs) should not become pregnant and, in the event of pregnancy occurring accidentally, then the drug should be discontinued as soon as possible. You should consult your doctor as soon as possible if you become pregnant on any of these medications.



Syncope causes falls in older people

An older adult (65 years and over) is particularly prone to syncope. This is because older people are less able to deal with falls in blood pressure as the body's mechanisms slow over the years.

Chronic medical problems, including diabetes, congestive heart failure, coronary artery disease, strokes and Parkinson's disease can increase the chance of an older person fainting at some point. Multiple medications can also be a problem if they are not regularly monitored.

Syncope causes a significant amount of falls in older people and syncope and falls are the most common reasons for older patients to attend accident and emergency departments.

STARS

Syncope Trust And Reflex anoxic Seizures®

www.stars.org.uk

Working together with individuals, families and medical professionals to offer support and information on syncope and reflex anoxic seizures

Please remember this publication provides general guidelines only. Individuals should always discuss their condition with a healthcare professional.

STARS would like to thank all those who helped in the development and review of this publication. In particular, thanks are given to Dr Adam Fitzpatrick, Prof. Mike Gammage, and Dr Charlotte D'Souza.

Unit 6B
Essex House
Cromwell Business Park
Chipping Norton
Oxfordshire
OX7 5SR

+44 (0)1789 867 503
@ info@stars.org.uk
→ www.stars.org.uk

Registered Charity No. 1084898

© STARS
Published March 2007
Reviewed July 2017



endorsed by
 Department of Health

Patrons

Prof. J B P Stephenson
Dr A P Fitzpatrick
Prof. R A Kenny
Prof. C J Mathias
Dr W Whitehouse
Dr W Wieling
Sir Elton John
Mr John Burton Race

Mrs Twiggy Lawson
Selma Blair

Trustees

Mr Andrew Fear
Mrs Cathrine Reid

Prof. Rose Anne Kenny
Dr William Whitehouse

Founder & Chief Executive

Trudie Lobban MBE

If you would like further information or would like to provide feedback please contact STARS.

