

Quick reference guide

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Transient loss of consciousness

Transient loss of consciousness ('blackouts') management
in adults and young people

About this booklet

This is a quick reference guide that summarises the recommendations NICE has made to the NHS in 'Transient loss of consciousness ('blackouts') management in adults and young people' (NICE clinical guideline 109).

Who should read this booklet?

This quick reference guide is for GPs, Emergency Department staff, ambulance staff, cardiologists, specialists in epilepsy, and other staff who care for people who have experienced transient loss of consciousness.

Who wrote the guideline?

The guideline was developed by the National Clinical Guideline Centre, which is based at the Royal College of Physicians. The Collaborating Centre worked with a group of healthcare professionals (including consultants, GPs and nurses), patients and carers, and technical staff, who reviewed the evidence and drafted the recommendations. The recommendations were finalised after public consultation.

For more information on how NICE clinical guidelines are developed, go to www.nice.org.uk

Where can I get more information about the guideline?

The NICE website has the recommendations in full, reviews of the evidence they are based on, a summary of the guideline for patients and carers, and tools to support implementation (see page 11 for more details).

National Institute for Health and Clinical Excellence

MidCity Place

71 High Holborn

London

WC1V 6NA

www.nice.org.uk

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NICE clinical guidelines are recommendations about the treatment and care of people with specific diseases and conditions in the NHS in England and Wales.

This guidance represents the view of NICE, which was arrived at after careful consideration of the evidence available. Healthcare professionals are expected to take it fully into account when exercising their clinical judgement. However, the guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer, and informed by the summary of product characteristics of any drugs they are considering.

Implementation of this guidance is the responsibility of local commissioners and/or providers. Commissioners and providers are reminded that it is their responsibility to implement the guidance, in their local context, in light of their duties to avoid unlawful discrimination and to have regard to promoting equality of opportunity. Nothing in this guidance should be interpreted in a way that would be inconsistent with compliance with those duties.

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Introduction

This guideline is about the assessment, diagnosis and specialist referral of adults and young people (aged 16 and older) who have experienced a blackout (the medical term for this is 'transient loss of consciousness' or TLoC for short).

TLoC is very common: it affects up to half the population in the UK at some point in their lives. TLoC may be defined as spontaneous loss of consciousness with complete recovery. In this context, complete recovery would involve full recovery of consciousness without any residual neurological deficit. An episode of TLoC is often described as a 'blackout' or a 'collapse', but some people collapse without TLoC and this guideline does not cover that situation. There are various causes of TLoC, including cardiovascular disorders (which are the most common), neurological conditions such as epilepsy, and psychogenic attacks.

The diagnosis of the underlying cause of TLoC is often inaccurate, inefficient and delayed. There is huge variation in the management of TLoC. A substantial proportion of people initially diagnosed with, and treated for, epilepsy have a cardiovascular cause for their TLoC. Some people have expensive and inappropriate tests or inappropriate specialist referral; others with potentially dangerous conditions may not receive appropriate assessment, diagnosis and treatment.

People experiencing TLoC may come under the care of a range of clinicians, and the lack of a clear pathway may contribute to misdiagnosis and inappropriate treatment.

This guideline aims to define the appropriate pathways for the initial assessment, diagnosis and specialist referral of people who have had TLoC, so that they receive the correct diagnosis quickly, efficiently and cost effectively, leading to a suitable management plan.

Patient-centred care

Treatment and care should take into account patients' individual needs and preferences. Good communication is essential, supported by evidence-based information, to allow patients to reach informed decisions about their care. Follow advice on seeking consent from the Department of Health or Welsh Assembly Government if needed. If the patient agrees, families and carers should have the opportunity to be involved in decisions about treatment and care.

When recording a description of the suspected TLoC from the patient or a witness, ensure that their communication and other needs are taken into account. This is particularly important when communicating with a child or young person, or person with special communication needs.

Key to terms

12-lead ECG Recording of the heart's electrical signals obtained by attaching electrodes in ten standard positions on the limbs and the surface of the chest. This provides a display of the electrical activity of the heart viewed from 12 different directions.

Arrhythmia An abnormal heart rhythm.

Asystole Sustained absence of the heart's electrical activity.

Bradycardia Slow heart rate (irrespective of rhythm), conventionally defined as less than 60 beats per minute.

Brugada syndrome An inherited ion channel disorder characterised by abnormal ST segment elevation in leads V1 to V3 on ECG. This predisposes to ventricular arrhythmia and sudden cardiac death, and may present with syncope.

Cardiac arrhythmic syncope Syncope caused by a sudden abnormality of heart rhythm, which may be a bradyarrhythmia (abnormal rhythm with a slow heart rate) or a tachyarrhythmia (abnormal rhythm with a fast heart rate).

Carotid sinus massage A procedure in which the carotid sinus is stimulated (by firm massage with a thumb during continuous ECG and blood pressure monitoring in both supine and upright positions) to investigate suspected or possible carotid sinus syncope.

Carotid sinus syncope A form of neurally mediated syncope in which pressure on one or other carotid artery causes syncope.

Convulsive syncope Loss of consciousness caused by transient insufficiency of blood supply to the brain accompanied by jerky or posturing movements, generally involving the limbs.

Déjà vu An intense sensation that what is happening for the first time has already occurred previously. This is common particularly in adolescence, but may be a manifestation of a partial seizure (rather than occurring immediately before an epileptic seizure).

External event recorder A small portable recorder that is capable of monitoring and storing ECG recordings from electrodes on the skin. The device records the heart's rhythm during symptoms (including syncope) that occur intermittently. Excludes event recorders that do not perform continuous ECG monitoring (and therefore are not capable of documenting cardiac rhythm at the moment of TLoC).

Faint Episode of TLoC due to vasovagal syncope. Fainting is a temporary loss of consciousness due to a drop in blood flow to the brain. The episode is brief and is followed by rapid and complete recovery.

Holter monitor/recorder A small portable recorder that is capable of continuous ECG recording from electrodes on the skin, usually used over a 24- to 72-hour period.

Ictal arrhythmia A disturbance of normal heart rhythm occurring during a seizure.

Implantable event recorder Small implantable device capable of monitoring and storing ECG recordings of the heart's rhythm. It is also known as an implantable/insertable loop recorder.

Jamais vu A feeling of lack of familiarity, that what should be familiar is happening for the first time; it is usually abnormal, it doesn't commonly occur in healthy people.

Long QT syndromes Inherited conditions characterised by prolongation of a specific portion of the ECG. This predisposes to ventricular arrhythmia and sudden cardiac death, and may present with syncope.

Micturition syncope A form of neurally mediated syncope provoked by straining while passing urine while standing.

Neurally mediated syncope Sometimes called 'reflex syncope'. Transient loss of consciousness due to a reflex hypotensive response and/or reflex bradycardic response to a number of causes; this category includes vasovagal syncope, carotid sinus syncope, and situational syncope.

Orthostatic hypotension Condition in which a marked fall in blood pressure is provoked by a change in posture from lying to sitting, or from lying or sitting to standing. This may cause light-headedness (dizziness), a fall, or TLoC.

Post-ictal confusion An abnormal state that follows an attack, usually referring to a disturbed condition after an epileptic seizure.

Prodrome Symptoms which precede the episode, usually considered to be more prominent than an aura, which is usually very brief.

Pseudosyncope A psychogenic non-epileptic attack characterised by loss of muscle tone and having the appearance of a faint.

Psychogenic non-epileptic seizures (PNES) Episodes of altered movement, sensation or experience, similar to epilepsy but caused by a psychological process and not associated with abnormal electrical discharges in the brain.

Red flags For this guideline, the term 'red flags' indicates that the person is considered to be at high risk of a serious adverse event and should be referred for urgent specialist assessment.

Short QT syndrome Inherited condition characterised by a specific portion of the ECG being of abnormally short duration. This predisposes to ventricular arrhythmia and sudden cardiac death, and may present with syncope.

Situational syncope A form of neurally mediated syncope occurring in certain specific situations (for example, cough syncope, micturition syncope, or swallowing syncope).

Specialist A healthcare professional who has expert knowledge of, and skills in, a particular clinical area, especially one who is certified by a higher medical educational organisation.

Structural heart disease Any disease of the heart in which the structural components of the heart are abnormal. This encompasses heart muscle disease, valve disease and congenital heart disease.

Tachycardia Fast heart rate (irrespective of rhythm), conventionally defined as greater than 100 beats per minute.

Tilt test Test in which a patient is exposed to passive head-up tilt, during which they have beat-to-beat measurement of heart rate and blood pressure, to try to demonstrate whether or not they have a provokable tendency to vasovagal syncope.

Vasovagal syncope A form of neurally mediated syncope. This is often, but not always, triggered by circumstances such as pain, prolonged standing (especially in a warm environment), or emotional stress. This commonly presents as an identifiable 'uncomplicated faint' but can present as sudden unprovoked syncope.

Ventricular fibrillation Chaotic electrical activity in the heart's ventricles, causing loss of pumping action and resulting in cardiac arrest. If not corrected immediately, this will lead to death.

Ventricular tachycardia Tachycardia arising from the heart's ventricular muscle. This can in some people cause syncope or cardiac arrest and sudden death.

Initial assessment and diagnosis

Box 1 Recording information and transfer of records

- Record details about:
 - circumstances of the event
 - person's posture immediately before loss of consciousness
 - prodromal symptoms (such as sweating or feeling warm/hot)
 - appearance (for example, whether eyes were open or shut) and colour of person during the event
 - presence or absence of movement during the event (for example, limb-jerking and its duration)
 - any tongue-biting (record whether the side or the tip of the tongue was bitten)
 - injury occurring during the event (record site and severity)
 - duration of the event (onset to regaining consciousness)
 - presence or absence of confusion during the recovery period
 - weakness down one side during the recovery period
- Record carefully information obtained from all accounts of the TLoC – include paramedic records with this information
- Give copies of electrocardiogram (ECG) record and patient report form to the person, and the receiving clinician when care is transferred

Person presents with suspected TLoC

Use clinical judgement to determine appropriate management and the urgency of treatment if:

- the person has sustained an injury
- the person has not made a full recovery of consciousness
- TLoC is secondary to a condition that requires immediate action

Record details of the suspected TLoC (see box 1) from the person and any witnesses (by telephone if necessary)

Accounts confirm TLoC?

Advice to give when a person presents with TLoC

- **Driving** Give advice about eligibility to drive¹
- **Health and safety at work** Advise people of the implications of their episode for health and safety at work and any action they must take to ensure the safety of themselves and other people²

No

Instigate suitable management³

Yes/unclear

Assess and record:

- details of any previous TLoC, including number and frequency
- the person's medical history and family history of cardiac disease (for example, personal history of heart disease and family history of sudden cardiac death)
- current medication that may have contributed to TLoC (for example, diuretics)
- vital signs (for example, pulse rate, respiratory rate and temperature) – repeat if clinically indicated
- lying and standing blood pressure if clinically appropriate
- other cardiovascular and neurological signs

Record a 12-lead ECG (see box 2)

Box 2 12-lead ECG

- Record a 12-lead ECG with automated interpretation
- Treat as a red flag (see box 3) if any of the following abnormalities are reported on the ECG printout:
 - conduction abnormality (for example, complete right or left bundle branch block or any degree of heart block)
 - evidence of a long or short QT interval
 - any ST segment or T wave abnormalities
- If a 12-lead ECG with automated interpretation is not available, take a manual 12-lead ECG reading and have this reviewed by a healthcare professional trained and competent in identifying the following abnormalities:
 - inappropriate persistent bradycardia
 - any ventricular arrhythmia (including ventricular ectopic beats)
 - long QT (corrected QT > 450 ms) and short QT (corrected QT < 350 ms) intervals
 - Brugada syndrome
 - ventricular pre-excitation (part of Wolff-Parkinson-White syndrome)
 - left or right ventricular hypertrophy
 - abnormal T wave inversion
 - pathological Q waves
 - atrial arrhythmia (sustained)
 - paced rhythm

Box 4 Making a diagnosis based on the initial assessment

- **Diagnose uncomplicated faint** (uncomplicated vasovagal syncope) when:
 - there are no features that suggest an alternative diagnosis⁴ **and**
 - there are features suggestive of uncomplicated faint (the 3 'P's) such as:
 - ◆ **Posture** (prolonged standing, or similar episodes that have been prevented by lying down)
 - ◆ **Provoking factors** (such as pain or a medical procedure)
 - ◆ **Prodromal symptoms** (such as sweating or feeling warm/hot before TLoC)
- **Diagnose situational syncope** when:
 - there are no features that suggest an alternative diagnosis **and**
 - syncope is clearly and consistently provoked by straining during micturition (usually while standing) or by coughing or swallowing

- If there is suspicion of an underlying problem causing TLoC or additional to TLoC, carry out **relevant** examinations and investigations (for example, check blood glucose levels if diabetic hypoglycaemia is suspected, or haemoglobin levels if anaemia or bleeding is suspected)
- Do **not** routinely request an electroencephalogram (EEG)

If there is a condition that requires immediate action, use clinical judgement to determine appropriate management and urgency of treatment

Red flag (see box 3)?

No

Yes

Box 3 Red flags

- Refer within 24 hours for specialist cardiovascular assessment (by the most appropriate local service) anyone with TLoC who also has any of the following:
 - an ECG abnormality (see box 2)
 - heart failure (history or physical signs)
 - TLoC during exertion
 - family history of sudden cardiac death in people aged younger than 40 years and/or an inherited cardiac condition
 - new or unexplained breathlessness
 - a heart murmur
- Consider referring within 24 hours anyone aged older than 65 years who has experienced TLoC without prodromal symptoms

Box 5 Advice for people waiting for a specialist assessment

- **Driving:** Advise all people who have experienced TLoC that they must not drive while waiting for specialist assessment. After specialist assessment, the healthcare professional should advise the person of their obligations regarding reporting the TLoC to the Driver and Vehicle Licensing Agency (DVLA)¹
- **Advise people waiting for a specialist cardiovascular assessment:**
 - what they should do if they have another event
 - if appropriate, how they should modify their activity (for example, by avoiding physical exertion) and not to drive¹
- **Offer advice to people waiting for a specialist neurological assessment** as recommended in 'The epilepsies: the diagnosis and management of the epilepsies in adults and children in primary and secondary care' (NICE clinical guideline 20)

Uncomplicated faint (uncomplicated vasovagal syncope) or situational syncope (see box 4)?

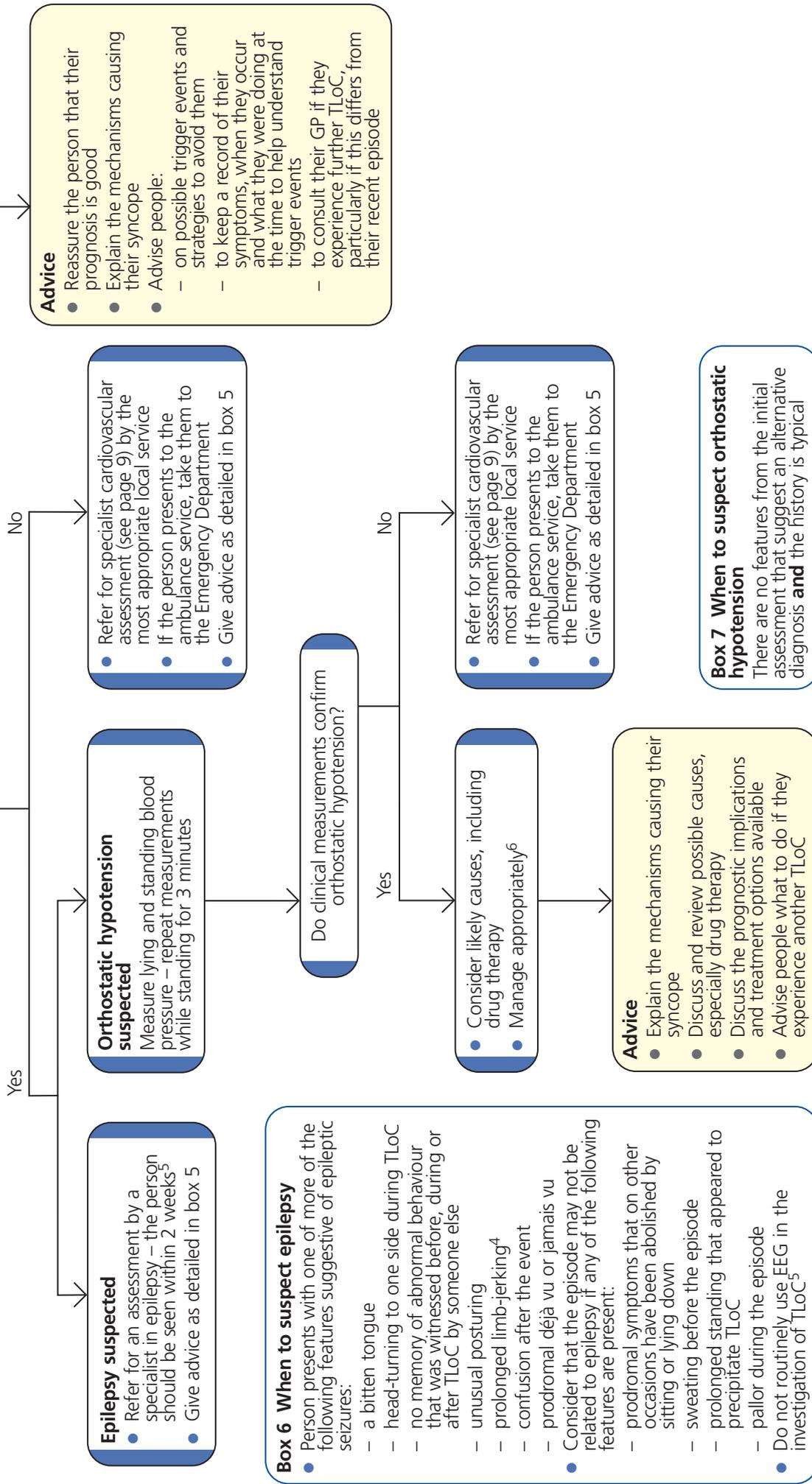
No

Yes

Epilepsy (see box 6) or orthostatic hypotension suspected (see box 7)?

- If there is nothing in the initial assessment to raise clinical or social concern, no further immediate management required
- If the presentation is not to the GP:
 - advise the person to take a copy of the patient report form and ECG record to their GP
 - inform the GP about the diagnosis, directly if possible
 - if an ECG has not been recorded, the GP should arrange one (and its interpretation as detailed in box 2) within 3 days

- Refer for specialist cardiovascular assessment (see page 9) by the most appropriate local service within 24 hours
- If the person presents to the ambulance service, take them to the Emergency Department
- Give advice as detailed in box 5



¹ Please refer to the DVLA for further information at www.dft.gov.uk/dvla/medical/medical_advisory_information/medicaladvisory_meetings/pmembers_nervous_system.aspx

² Please refer to 'Health and Safety at Work etc Act 1974' available from www.hse.gov.uk/legislation/hswa.htm

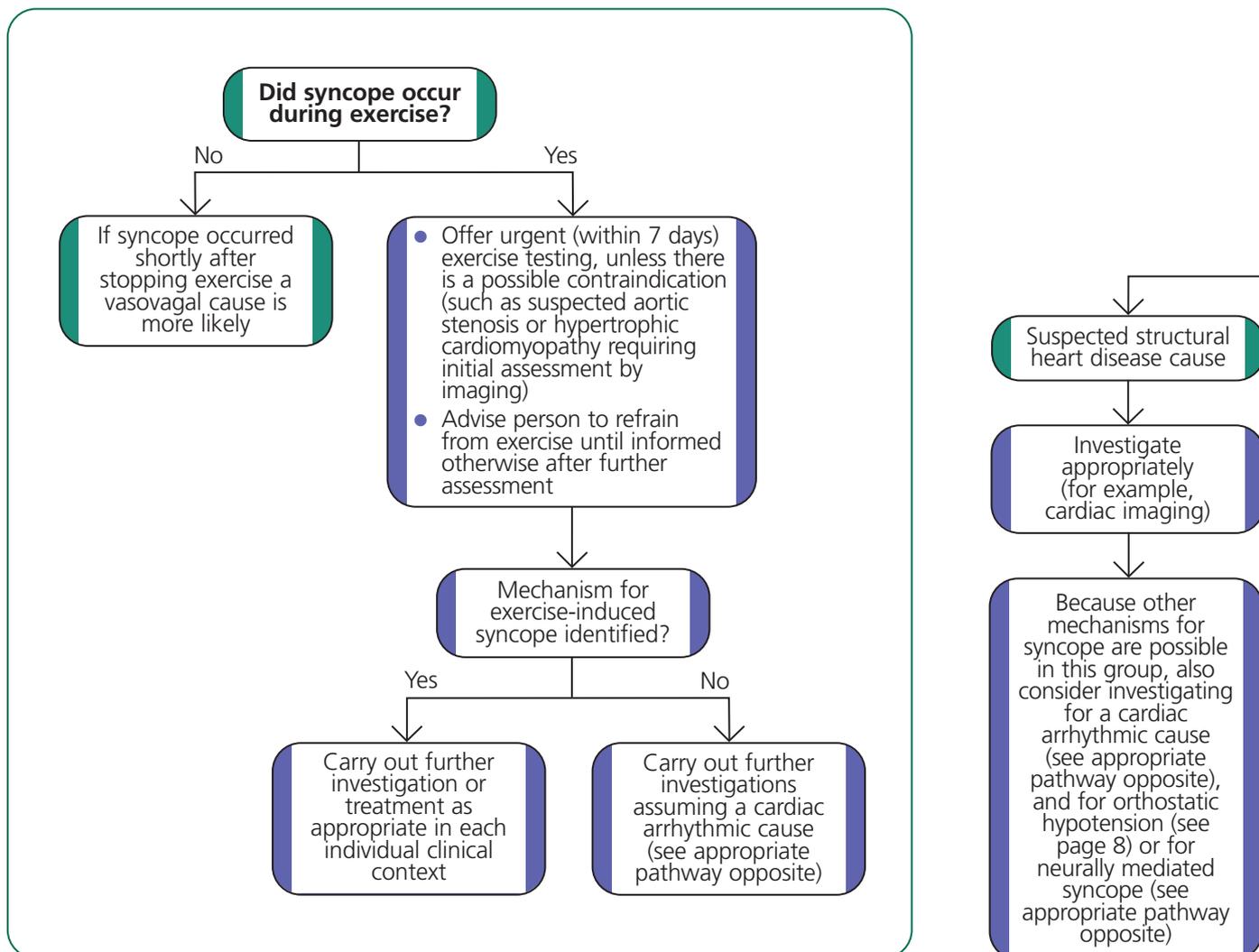
³ For example, if the person is determined to have had a fall rather than TLoC, see 'Falls: the assessment and prevention of falls in older people' (NICE clinical guideline 21).

⁴ Note that brief seizure-like activity can occur during uncomplicated faints and is not necessarily diagnostic of epilepsy.

⁵ See 'The epilepsies: the diagnosis and management of the epilepsies in adults and children in primary and secondary care' (NICE clinical guideline 20).

⁶ For example, see 'Falls: the assessment and prevention of falls in older people' (NICE clinical guideline 21).

Specialist cardiovascular assessment and diagnosis



Box 8 Criteria to determine type of ambulatory ECG

For people who have:

- TLoC at least several times a week, offer Holter monitoring (up to 48 hours if necessary). If no further TLoC occurs during the monitoring period, offer an external event recorder that provides continuous recording with the facility for the patient to indicate when a symptomatic event has occurred
- TLoC every 1–2 weeks, offer an external event recorder. If the person experiences further TLoC outside the period of external event recording, offer an implantable event recorder¹
- TLoC infrequently (less than once every 2 weeks), offer an implantable event recorder¹. A Holter monitor should not usually be offered unless there is evidence of a conduction abnormality on the 12-lead ECG

If the cause of TLoC remains uncertain

- If a person has persistent TLoC, consider psychogenic non-epileptic seizures (PNES) or psychogenic pseudosyncope if, for example:
 - the nature of the events changes over time
 - there are multiple unexplained physical symptoms
 - there are unusually prolonged events
- The distinction between epilepsy and non-epileptic seizures is complex; therefore, refer for neurological assessment if either PNES or psychogenic pseudosyncope is suspected
- Advise people to try to record any future TLoC events (for example, a video recording or a detailed witness account of the event), particularly if diagnosis is unclear or taking a history is difficult
- If after further assessment the cause of TLoC remains uncertain or the person has not responded to treatment, consider other causes, including the possibility that more than one mechanism may co-exist (for example, ictal arrhythmias)

- Reassess the person's:
 - history of TLoC, including any previous events
 - medical history, and any family history of cardiac disease or an inherited cardiac condition
 - drug therapy at the time of TLoC and any subsequent changes
- Conduct a clinical examination, including full cardiovascular examination and, if clinically appropriate, measurement of lying and standing blood pressure
- Repeat 12-lead ECG and examine previous ECG recordings

Assign to suspected cause of syncope and offer further testing as directed below, or other tests as clinically appropriate

Suspected cardiac arrhythmic cause

- Offer an ambulatory ECG as a first-line investigation
 - choose type of ambulatory ECG based on person's history (and in particular, frequency) of TLoC (see box 8)
- Do not offer a tilt test as a first-line investigation

Suspected neurally mediated cause

Vasovagal syncope suspected

Do not offer a tilt test to people who have a diagnosis of vasovagal syncope on initial assessment

Only consider a tilt test if the person has recurrent episodes of TLoC that adversely affect their quality of life, or represent a high risk of injury, to assess whether the syncope is accompanied by a severe cardioinhibitory response (usually asystole)

Carotid sinus syncope suspected

- Offer carotid sinus massage
- Carry out this test in a controlled environment, with ECG recording and resuscitation equipment available

Syncope due to marked bradycardia/asystole and/or marked hypotension reproduced?

Diagnose carotid sinus syncope

Negative carotid sinus massage test (includes carotid sinus massage induction of asymptomatic transient bradycardia or hypotension)

Unexplained cause

Is the person 60 years or older?

Yes

No

- Offer an ambulatory ECG
 - choose type of ambulatory ECG based on person's history (and in particular, frequency) of TLoC (see box 8)
- Do not offer a tilt test before the ambulatory ECG

General information to provide

When communicating with the person who had TLoC, discuss the:

- possible causes of their TLoC
- benefits and risks of any test they are offered
- results of tests they have had
- reasons for any further investigations
- nature and extent of uncertainty in the diagnosis

¹ When offering a person an implantable event recorder, provide one that has both patient-activated and automatic detection modes. Instruct the person and their family and/or carer how to operate the device. Advise the person that they should have prompt follow-up (data interrogation of the device) after they have any further TLoC. The timing of the follow-up is dependent on the storage of the device and the condition of the person.

Further information

Ordering information

You can download the following documents from www.nice.org.uk/guidance/CG109

- The NICE guideline – all the recommendations.
- A quick reference guide (this document) – a summary of the recommendations for healthcare professionals.
- ‘Understanding NICE guidance’ – a summary for patients and carers.
- The full guideline – all the recommendations, details of how they were developed, and reviews of the evidence they were based on.

For printed copies of the quick reference guide or ‘Understanding NICE guidance’, phone NICE publications on 0845 003 7783 or email publications@nice.org.uk and quote:

- N2270 (quick reference guide)
- N2271 (‘Understanding NICE guidance’).

Implementation tools

NICE has developed tools to help organisations implement this guidance (see www.nice.org.uk/guidance/CG109).

Related NICE guidance

For information about NICE guidance that has been issued or is in development, see www.nice.org.uk

Published

- Unstable angina and NSTEMI. NICE clinical guideline 94 (2010). Available from: www.nice.org.uk/guidance/CG94
- Stroke. NICE clinical guideline 68 (2008). Available from: www.nice.org.uk/guidance/CG68

- Head injury. NICE clinical guideline 56 (2007). Available from: www.nice.org.uk/guidance/CG56
- Anxiety (amended). NICE clinical guideline 22 (2007). Available from: www.nice.org.uk/guidance/CG22
- Atrial fibrillation. NICE clinical guideline 36 (2006). Available from: www.nice.org.uk/guidance/CG36
- Falls. NICE clinical guideline 21 (2004). Available from: www.nice.org.uk/guidance/CG21
- The epilepsies. NICE clinical guideline 20 (2004). Available from: www.nice.org.uk/guidance/CG20

Under development

NICE is developing the following guidance (details available from www.nice.org.uk):

- The epilepsies (update). NICE clinical guideline. Publication expected March 2011.

Updating the guideline

This guideline will be updated as needed, and information about the progress of any update will be available at

www.nice.org.uk/guidance/CG109

**National Institute for
Health and Clinical Excellence**

MidCity Place
71 High Holborn
London
WC1V 6NA

www.nice.org.uk

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