

2018 ESC Guidelines for the diagnosis and management of syncope



Key Messages & Recommendations

Professor Rose Anne Kenny

<https://www.escardio.org/Guidelines/...Guidelines/Syncope-Guidelines-on-Diagnosis-a-...>

The 2018 Guidelines on Syncope consist of a Full text, a supplementary data document giving

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EHJ Doi:10.1093/eurheartj/ehy037



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ESC GUIDELINES

2018 ESC Guidelines for the diagnosis and management of syncope

The Task Force for the diagnosis and management of syncope of the European Society of Cardiology (ESC)

Developed with the special contribution of the European Heart Rhythm Association (EHRA)

Endorsed by: European Academy of Neurology (EAN), European Federation of Autonomic Societies (EFAS), European Federation of Internal Medicine (EFIM), European Union Geriatric Medicine Society (EUGMS), European Society of Emergency Medicine (EuSEM)

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Key messages

- Diagnosis: initial evaluation
- Diagnosis: subsequent investigations
- Treatment

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Key messages

Diagnosis: initial evaluation

1. At the initial evaluation answer the following four key questions:

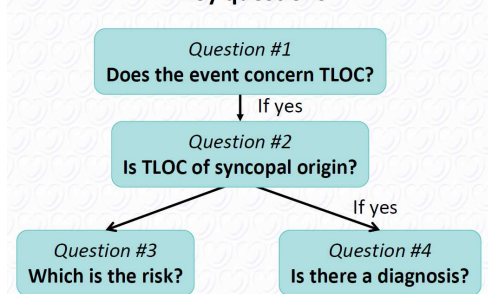
- Was the event TLOC?
- In cases of TLOC, are they of syncopal or non-syncopal origin?
- In cases of suspected syncope, is there a clear aetiological diagnosis?
- Is there evidence to suggest a high risk of cardiovascular events or death?

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The initial evaluation of T-LOC

4 key questions



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Key messages

Diagnosis: initial evaluation

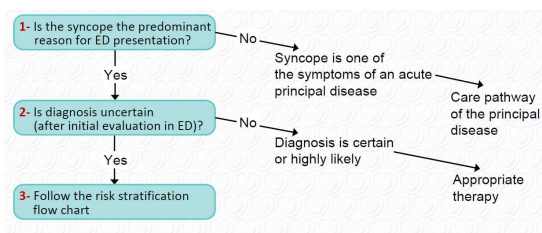
2. At the evaluation of TLOC in the ED, answer the following three key questions:

- Is there a serious underlying cause that can be identified?
- If the cause is uncertain, what is the risk of a serious outcome?
- Should the patient be admitted to hospital?

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Management of syncope in the ED



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Management of syncope in the ED

Should the patient be admitted to hospital?

| Favour initial management in ED observation unit and/or fast-track to syncope unit | Favour admission to hospital |
|---|--|
| High-risk features AND: <ul style="list-style-type: none"> Stable, known structural heart disease Severe chronic disease Syncope during exertion Syncope while supine or sitting Syncope without prodrome Palpitations at the time of syncope Inadequate sinus bradycardia or sinoatrial block Suspected device malfunction or inappropriate intervention Pre-excited QRS complex SVT or paroxysmal atrial fibrillation ECG suggesting an inheritable arrhythmogenic disorders ECG suggesting ARVC | High-risk features AND: <ul style="list-style-type: none"> Any potentially severe coexisting disease that requires admission Injury caused by syncope Need of further urgent evaluation and treatment if it cannot be achieved in another way (i.e. observation unit), e.g. ECG monitoring, echocardiography, stress test, electrophysiological study, angiography, device malfunction, etc Need for treatment of syncope |

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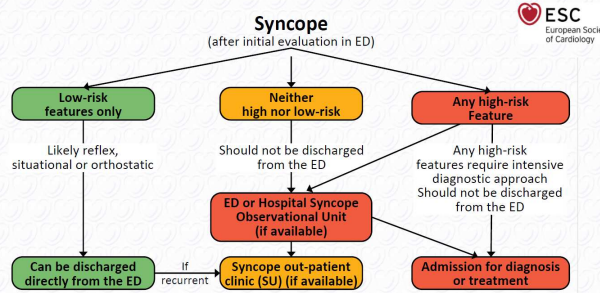
Management of syncope in the ED



Short-term outcome of syncope pts in ED

Average data of 10401 patients from 13 studies:

| | |
|---|-----------------|
| Patients admitted, median (IQR) | 49% (32-59) |
| Death within 7-30 days: | 0.8% (0.6-1.1) |
| Non-fatal severe outcome <u>while in ED</u> | 6.9% (4.5-10.3) |
| Non-fatal severe outcome <u>in the next 7-30 days</u> | 3.6% (3.4-5.3) |



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Diagnosis: initial evaluation

- In all patients, perform a complete history taking, physical examination (including standing BP measurement), and standard ECG.
- Perform immediate **ECG monitoring** (in bed or telemetry) in high risk patients when there is a suspicion of arrhythmic syncope.
- Perform **echocardiogram** when there is previous known heart disease, or data suggestive of structural heart disease or syncope secondary to cardiovascular cause.

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Diagnosis: initial evaluation

- Perform **CSM** in patients >40 years of age with syncope of unknown origin compatible with a reflex mechanism.
- Perform **tilt testing** in cases where there is suspicion of syncope due to **reflex** or an **orthostatic cause**.
- Perform **blood tests** when **clinically indicated**, e.g. haematocrit and cell blood count when **haemorrhage** is suspected, oxygen saturation and blood gas analysis when **hypoxic syndromes** are suspected, **troponin** when cardiac ischaemia-related syncope is suspected, and **D-dimer** when pulmonary embolism is suspected.

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Diagnosis: subsequent investigations

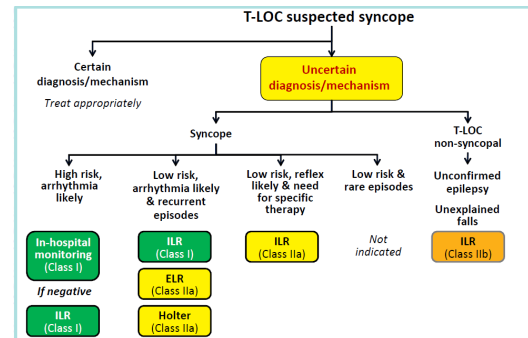
9. Perform prolonged ECG monitoring (external or implantable) in patients with recurrent severe unexplained syncope who have all of the following three features:

- Clinical or ECG features suggesting **arrhythmic syncope**.
- A high **probability of recurrence** of syncope in a reasonable time.
- Who may benefit from a **specific therapy** if a cause for syncope is found.

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ECG monitoring: indications



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Diagnosis: subsequent investigations

10. Perform EPS in patients with unexplained syncope and bifascicular BBB (impending high-degree AV block) or suspected tachycardia

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Electrophysiological study: Indications

| Electrophysiological study | | |
|---|--------------------|--------------------|
| Recommendations | Class ^a | Level ^b |
| Indications | | |
| In patients with syncope and previous myocardial infarction, or other scar-related conditions, EPS is indicated when syncope remains unexplained after non-invasive evaluation. ²¹⁸ | I | B |
| In patients with syncope and bifascicular BBB, EPS should be considered when syncope remains unexplained after non-invasive evaluation. ^{198,214-217,221} | IIa | B |
| In patients with syncope and asymptomatic sinus bradycardia, EPS may be considered in a few instances when non-invasive tests (e.g. ECG monitoring) have failed to show a correlation between syncope and bradycardia. ^{219,222} | IIb | B |
| In patients with syncope preceded by sudden and brief palpitations, EPS may be considered when syncope remains unexplained after non-invasive evaluation. | IIb | C |

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Diagnosis: subsequent investigations

11. Perform an exercise stress test in patients who experience syncope during or shortly after exertion.

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Exercise testing

| Recommendations | Class | Level |
|---|-------|-------|
| Indications | | |
| 1. Exercise testing is indicated in patients who experience syncope during or shortly after exertion. | I | C |
| Diagnostic criteria | | |
| 2. Syncope due to second- or third-degree AV block is confirmed when the AV block develops during exercise, even without syncope. | I | C |
| 3. Reflex syncope is confirmed when syncope is reproduced immediately after exercise in the presence of severe hypotension. | I | C |

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Key messages

Diagnosis: subsequent investigations

12. Consider basic autonomic function tests (Valsalva manoeuvre and deepbreathing test) and ABPM for the assessment of autonomic function in patients with suspected neurogenic OH.

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Basic cardiovascular autonomic function tests

| Recommendations | Class | Level |
|--|-------|-------|
| Valsalva manoeuvre | | |
| 1. Valsalva manoeuvre should be considered for assessment of autonomic function in patients with suspected neurogenic OH. | Ila | B |
| 2. Valsalva manoeuvre may be considered for confirming the hypotensive tendency induced by some forms of situational syncope, e.g. cough, brass instrument playing, singing and weight lifting. | Iib | C |
| Deep breathing test | | |
| 3. Deep breathing test should be considered for assessment of autonomic function in patients with suspected neurogenic OH. | Ila | B |
| Other autonomic function tests | | |
| 4. Other autonomic function tests (30:15 ratio, cold pressure test, sustained hand grip test, and mental arithmetic test) may be considered for assessment of autonomic function in patients with suspected neurogenic OH. | Iib | C |

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Diagnosis: subsequent investigations

13. Consider video recording (at home or in hospital) of TLOC suspected to be of non-syncopal nature.

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Video recording

| Recommendations | Class | Level |
|--|-------|-------|
| 1. Home video recordings of spontaneous events should be considered. Physicians should encourage patients and their relatives to obtain home video recordings of spontaneous events. | Ila | C |
| 2. Adding video recording to tilt testing may be considered in order to increase reliability of clinical observation of induced events. | Iib | C |

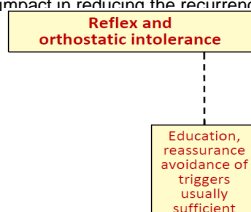
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Key messages

Treatment

14. To all patients with reflex syncope and OH, explain the diagnosis, reassure, explain the risk of recurrence, and give advice on how to avoid triggers and situations. These measures are the cornerstone of treatment and have a high impact in reducing the recurrence of syncope.



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Treatment

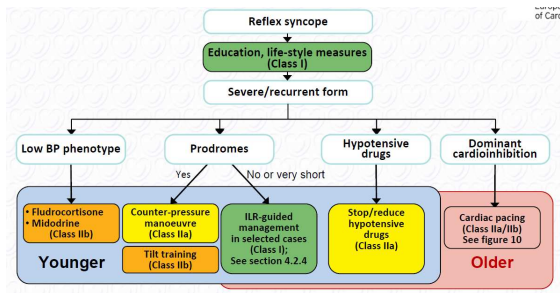
15. In patients with severe forms of reflex syncope, select one or more of the following additional specific treatments according to the clinical features:

- Midodrine or fludrocortisone in young patients with low BP phenotype.
- Counter-pressure manoeuvres (including tilt training if needed) in young patients with prodromes.
- ILR-guided management strategy in selected patients without or with short prodromes.
- Discontinuation/reduction of hypotensive therapy targeting a systolic BP of 140 mmHg in old hypertensive patients.
- Pacemaker implantation in old patients with dominant cardioinhibitory forms.

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Treatment syncope: Reflex syncope



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Treatment

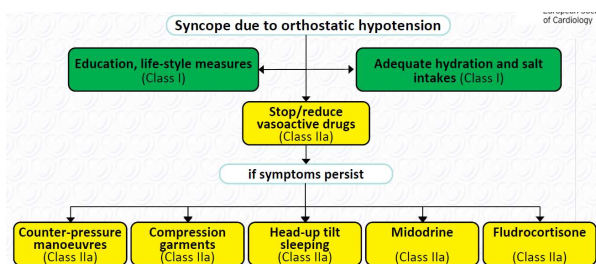
16. In patients with OH, select one or more of the following additional specific treatments according to clinical severity:

- Education regarding lifestyle manoeuvres.
- Adequate hydration and salt intake.
- Discontinuation/reduction of hypotensive therapy.
- Counter-pressure manoeuvres.
- Abdominal binders and/or support stockings.
- Head-up tilt sleeping.
- Midodrine or fludrocortisone.

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Treatment of syncope: Orthostatic hypotension



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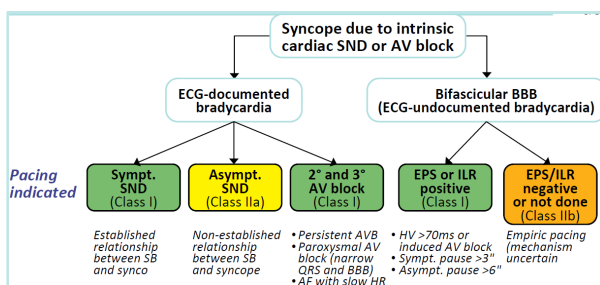
Treatment

17. Ensure that all patients with cardiac syncope receive the specific therapy of the culprit arrhythmia and/or of the underlying disease

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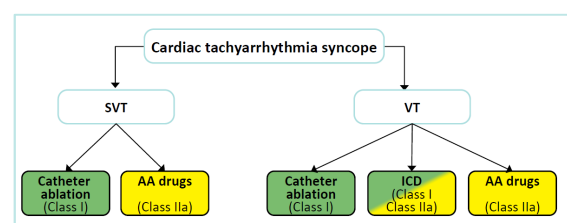
Treatment of syncope: Cardiac arrhythmias



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Treatment of syncope: Cardiac tachyarrhythmias



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Europace (2015) 17, 1325–1340
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EHRA POSITION PAPER

Syncope Unit: rationale and requirement – the European Heart Rhythm Association position statement endorsed by the Heart Rhythm Society

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Definition of a Syncope Unit

An SU is a facility featuring a **standardized** approach to the diagnosis and management of T-LOC and related symptoms, with **dedicated staff** and **access** to appropriate diagnostics and therapies.

The SU should also take the **lead** in *educating and training* clinicians who encounter syncope.



Table 3 cont. Comparison between systematic evaluation and conventional management

| | | | | |
|--|---|---|-----|---|
| Perry et al. ¹⁸ UK | Education through management algorithm for acute medical services; effect on patient admitted for falls and syncope | One-month period before (C) vs. 1-month period a year later (E) | 41 | 19% reduction of costs per patient 2% reduction in unexplained syncope |
| Annirani et al. ¹⁹ Italy | | | 16 | |
| Fedorowski et al. ²⁰ Sweden | | | 16 | |
| McCarthy et al. ²¹ Ireland | | | | |
| Daccarett et al. ²² USA | | | | |
| Shin et al. ²³ South Korea | | | 16 | |
| Sun ²⁴ USA | Up to 24 h observation ED | ED syncope presentation with usual care (C) or observation period (E) for intermediate-risk patients | 62 | 84% reduction in admissions 42% reduction of costs per patient |
| Sanders et al. ²⁵ USA | Standardized care implemented in Fair and Fall Clinic vs. historical control | Standardized care (E) vs. historical control (C) | 100 | 22% reduction in unexplained syncope 80% reduction in admissions |
| Sun et al. ²⁶ USA | Observation Unit in five EDs | Rate of admission and costs in patients >50 years randomized to observation unit (E) vs. standard of care (C) | 62 | 84% reduction in admissions 62% reduction in index hospital costs |
| Raucci et al. ²⁷ Italy | Standardized care implemented of paediatric guidelines vs. historical control in ED | Two years with protocol (E) vs. previous 2 years in one hospital | 470 | 72% reduction in unexplained syncope 54% reduction in admissions |

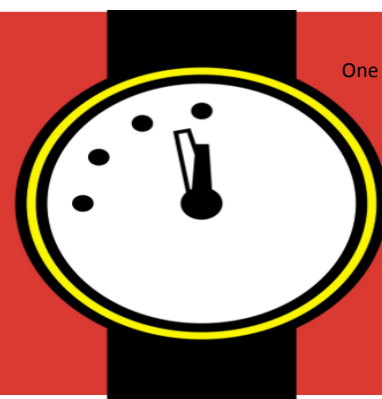
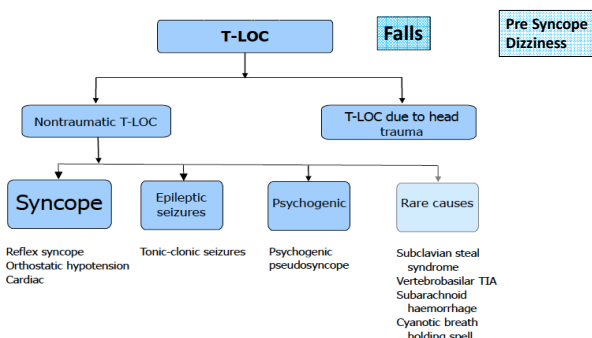
E, experimental group; C, control group; ED, Emergency Department.

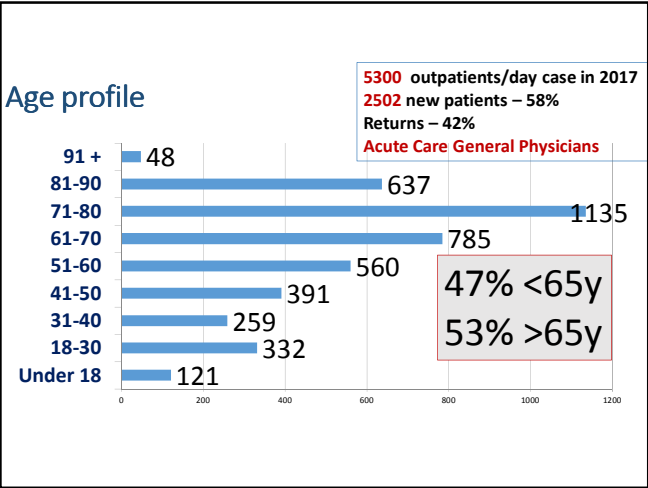
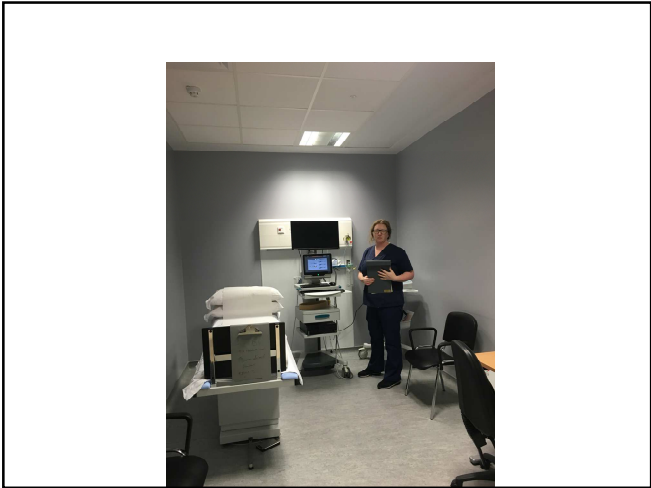
**1/17 Benefit
Cost/LOS/Diagnosis**

Rationale Syncope Unit

- *wide variation in practice* of syncope evaluation
- *wide variation in adoption* of recommendations from published guidelines
- *evidence benefit* systematic approach

Classification





ESC Guidelines: Key Components of a Syncope Unit

- The syncope unit should take the lead in service delivery for syncope, and in education and training of healthcare professionals who encounter syncope.
- The syncope unit should be led by a clinician with specific knowledge of TLOC and additional necessary team members (i.e. clinical nurse specialist) depending on the local model of service delivery.
- The syncope unit should provide minimum core treatments for reflex syncope and OH, and treatments or preferential access for cardiac syncope, falls, psychogenic pseudosyncope, and epilepsy.
- Referrals should be directly from family practitioners, EDs, in-hospital and out-hospital services, or self-referral depending on the risk stratification of referrals. Fast-track access, with a separate waiting list and scheduled follow-up visits, should be recommended.
- Syncope units should employ quality indicators, process indicators, and desirable outcome targets.

ED = emergency department; OH = orthostatic hypotension; TLOC = transient loss of consciousness.

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