Syncope – Epidemiology, Classification & Pathophysiology

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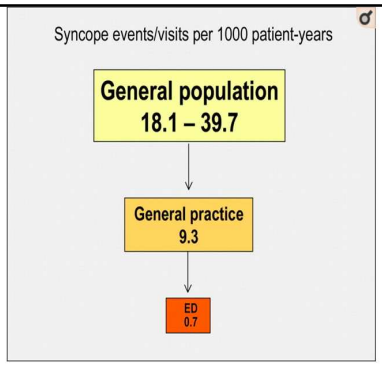
Transient loss of consciousness (TLOC) is a state of real or apparent loss of consciousness with loss of awareness, characterized by amnesia for the period of unconsciousness, abnormal motor control, loss of responsiveness, and a short duration

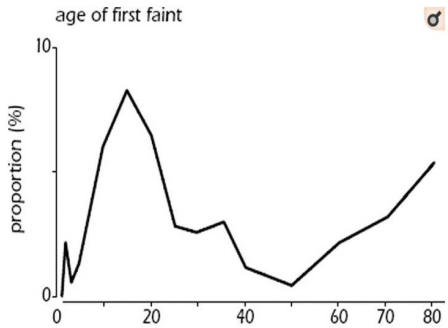
TLOC is **syncope** when there is:
a) presence of features specific for reflex, orthostatic hypotension, or cardiac syncope, *and;*
b) absence of features specific for other forms of TLOC

Definition

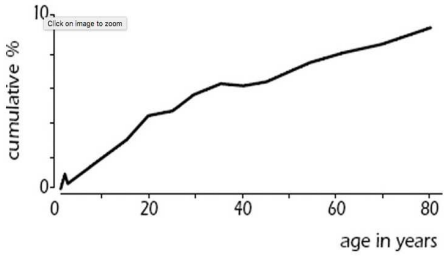
Syncope is defined as TLOC due to cerebral hypoperfusion, characterized by a rapid onset, short duration, and spontaneous complete recovery.

Epidemiology





Cumulative prevalence syncope

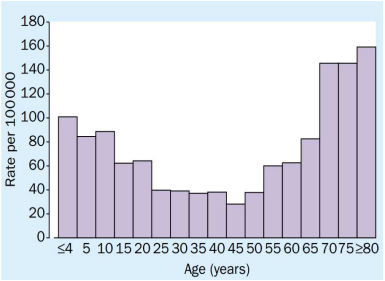


Vertebrobasilar TIA	Always focal neurological signs and symptoms, usually without LOC; if consciousness is lost this usually lasts longer than in TLOC.

Cardiac arrest	LOC yet no spontaneous recovery
Coma	Duration much longer than TLOC

Carotid TIA	Consciousness is for all practical purposes not lost in carotid TIAs, but there are pronounced focal neurological signs and symptoms
Subclavian steal syndrome	Associated with focal neurological signs
Metabolic disorders including hypoglycaemia, hypoxia, hyperventilation with hypocapnia	Duration much longer than in TLOC; consciousness may be impaired instead of lost
Intoxication	Duration much longer than in TLOC; consciousness may be impaired instead of lost
Cardiac arrest	LOC yet no spontaneous recovery
Coma	Duration much longer than TLOC

Incidence of seizures in different age groups

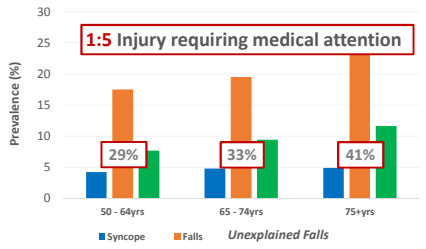


Stephen, L.J. and Brodie, M.J., 2000. *The Lancet*

Eyes open during LOC	Frequent	Nearly always
Fatigue and sleep afterwards	Common, particularly in children	Very common
Blue face	Rare	Fairly often

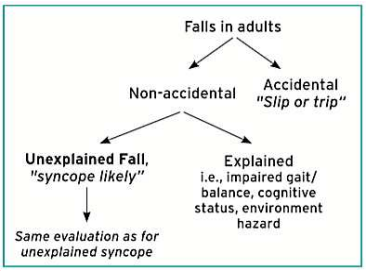
LOC = loss of consciousness; OH = orthostatic hypotension; VVS = vasovagal syncope.

Fall/Faint previous 12 months in 8504 adults > 50



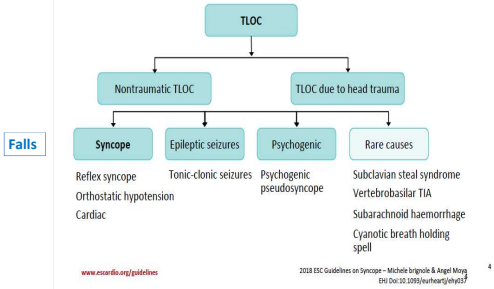
Bhangu J, .., Kenny RA . *PLOS ONE* 2017

Identification of unexplained falls



2018 ESC Guidelines on Syncope – Michele Brignole & Angel Moya
EHJ Doi:10.1093/eurheartj/ehy037

Classification



Presentation of patient with probable TLOC

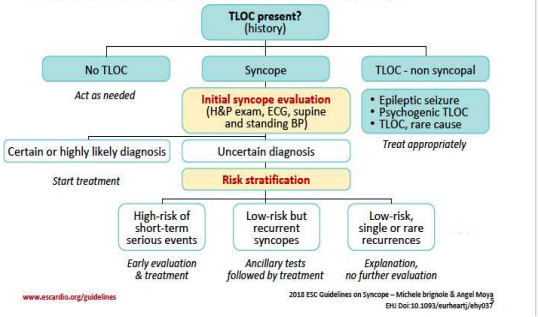


Table 3 Classification of syncope

Reflex (neurally mediated) syncope
Vasovagal:
- orthostatic VVS: standing, less common sitting
- emotional: fear, pain (somatic or visceral), instrumentation, blood phobia
Situational:
- micturition
- gastrointestinal stimulation (swallow, defaecation)
- cough, sneeze
- post-exercise
- others (e.g. laughing, brass instrument playing)
Carotid sinus syndrome
Non-classical forms (without prodromes and/or without apparent triggers and/or atypical presentation)

Syncope due to OH
Note that hypotension may be exacerbated by venous pooling during exercise (exercise-induced), after meals (postprandial hypotension), and after prolonged bed rest (deconditioning).
Drug-induced OH (most common cause of OH):
- e.g. vasodilators, diuretics, phenothiazine, antidepressants
Volume depletion:
- haemorrhage, diarrhoea, vomiting, etc.
Primary autonomic failure (neurogenic OH):
- pure autonomic failure, multiple system atrophy, Parkinson's disease, dementia with Lewy bodies
Secondary autonomic failure (neurogenic OH):
- diabetes, amyloidosis, spinal cord injuries, auto-immune autonomic neuropathy, paraneoplastic autonomic neuropathy, kidney failure

Cardiac syncope
Arrhythmia as primary cause:
Bradycardia:
- sinus node dysfunction (including bradycardia/tachycardia syndrome)
- atrioventricular conduction system disease
Tachycardia:
- supraventricular
- ventricular
Structural cardiac: aortic stenosis, acute myocardial infarction/ischaemia, hypertrophic cardiomyopathy, cardiac masses (atrial myxoma, tumours, etc.), pericardial disease/tamponade, congenital anomalies of coronary arteries, prosthetic valve dysfunction
Cardiopulmonary and great vessels: pulmonary embolus, acute aortic dissection, pulmonary hypertension

PATHOPHYSIOLOGY