

Syncope

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Fundamentals of First Aid and Emergency Care for
Radiography

Medical Technical Radiology Department

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Student Learning Outcomes (SLOs):

By the end of this lecture, students will be able to:

- Define **syncope** and describe its common causes.
- Recognize **early warning signs and symptoms** of syncope.
- Identify **risk factors** for fainting episodes in radiology departments.
- Describe the **immediate first aid steps** for a patient who faints.
- Apply **infection control and safety principles** while managing a fainting patient.



Introduction

- **Fainting (syncope)** is a sudden temporary loss of consciousness, caused by decreased blood flow to the brain.
- While fainting may indicate a particular medical condition, sometimes it may occur in an otherwise healthy individuals.



Introduction

- Usually **brief** and followed by **rapid recovery**.
- Common emergency in hospitals, including **radiology departments**, especially during procedures involving anxiety, pain, or prolonged standing.

Common Causes of Syncope

Category	Examples
Vasovagal (Neurocardiogenic)	Fear, pain, emotional stress, prolonged standing
Cardiac	Arrhythmia, structural heart disease
Orthostatic	Sudden standing, dehydration, blood loss
Situational	Coughing, urination, defecation
Metabolic	Hypoglycemia, hypoxia, anemia

WHAT CAUSES FAINTING?



Anxiety



Low blood pressure



Dehydration



Drugs or alcohol



Heart beat

Loss of blood flow to brain

New York Cardiac
Diagnostic Center

Predisposing Factors in Radiology

1. Long waiting or standing times before X-rays or MRI
2. Anxiety about the procedure
3. Pain during contrast injection or venipuncture
4. Hot or poorly ventilated room
5. Fasting or dehydration before imaging
6. Claustrophobia (especially during MRI)

Epidemiology

- Up to 40% of people experience syncope, which recurs in 14%.
- Prevalence increases with age and among women.
- Syncope may cause serious injury in elderly patients and is a frequent cause of emergency department visits.
- **Vasovagal syncope** is the most common cause of syncope;
Orthostatic Hypotension, the second most common.

Warning Signs (Presyncope)

Early symptoms often appear **seconds before fainting:**

- Dizziness
- Blurred vision
- Nausea
- Sweating
- Pale skin
- Weak pulse
- Feeling of warmth
- Yawning

Warning signs of fainting:



During Syncope



- **Loss of consciousness** (usually < 1 minute)
- **Limp body posture**
- **Slow pulse, shallow breathing**
- **Quick spontaneous recovery once lying flat**

DO'S

- *do stay calm
- *do reassuring (comfort) victim.
- *do check for medical bracelet.

Don'ts

- * Don't give food and drink to unconscious person.
- * Don't move an injured person unless you need to replace it



There are four main leading categories for alter LOC; which includes:

- **Neurological**
- **Metabolic**
- **Diffuse physiological brain dysfunction, e.g drugs or alcohol**
- **Psychiatric or functional**

Differential diagnoses in a patient with non-traumatic coma

Neurological	Metabolic	Diffuse physiological brain dysfunction	Psychiatric
Ischaemic stroke	Hypoglycaemia	Seizures – including nonconvulsive status epilepticus	Psychiatric coma
Intracerebral haemorrhage	Hyperglycaemia	Alcohol intoxication	Malingering
Subarachnoid haemorrhage	Hyponatraemia	Opioid toxicity	
Subdural haematoma	Hypernatraemia	Drug overdose	
Brain tumour	Hypercalcaemia	Poisoning	
Cerebral lymphoma	Addisonian crisis	Hypothermia	
Multiple brain metastases	Hypothyroidism	Neuroleptic malignant syndrome	
Central nervous system infection	Uraemia	Serotonin syndrome	
Cerebral abscess	Hypercapnia		
Cerebral oedema	Septic encephalopathy		
Hydrocephalus	Hepatic encephalopathy		
Anoxic brain injury (eg post cardiac arrest)			
Posterior reversible encephalopathy syndrome (PRES)			
Trauma			

Emergency situation response

Three C for responding in any emergency conditions;

❖ **check**

❖ **Call**

❖ **Care**



Fainting Emergency Response

1

Lie the individual down on his/her back.

2

Check their airway to make sure there's no obstruction.

3

If they are breathing, raise their legs 30 centimeters, to restore blood flow to the brain.

4

Loosen any restrictive clothing or belts.

Fainting Emergency Response - cont'd



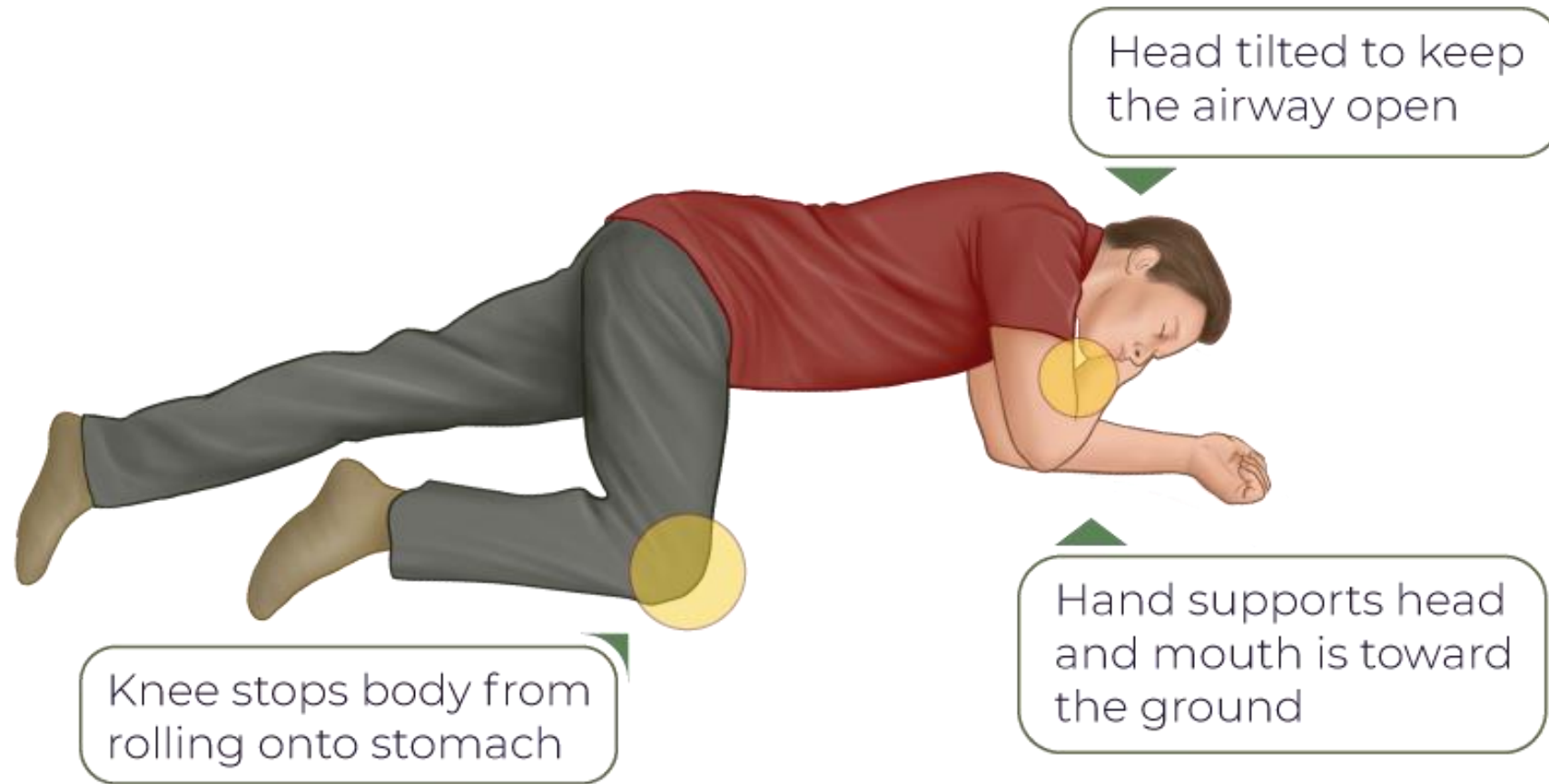
5. If they remain unconscious for **more than about a minute**, put them in the recovery position and get emergency medical help.



6. If there is no sign of breathing or circulation, start cardiopulmonary resuscitation (CPR).

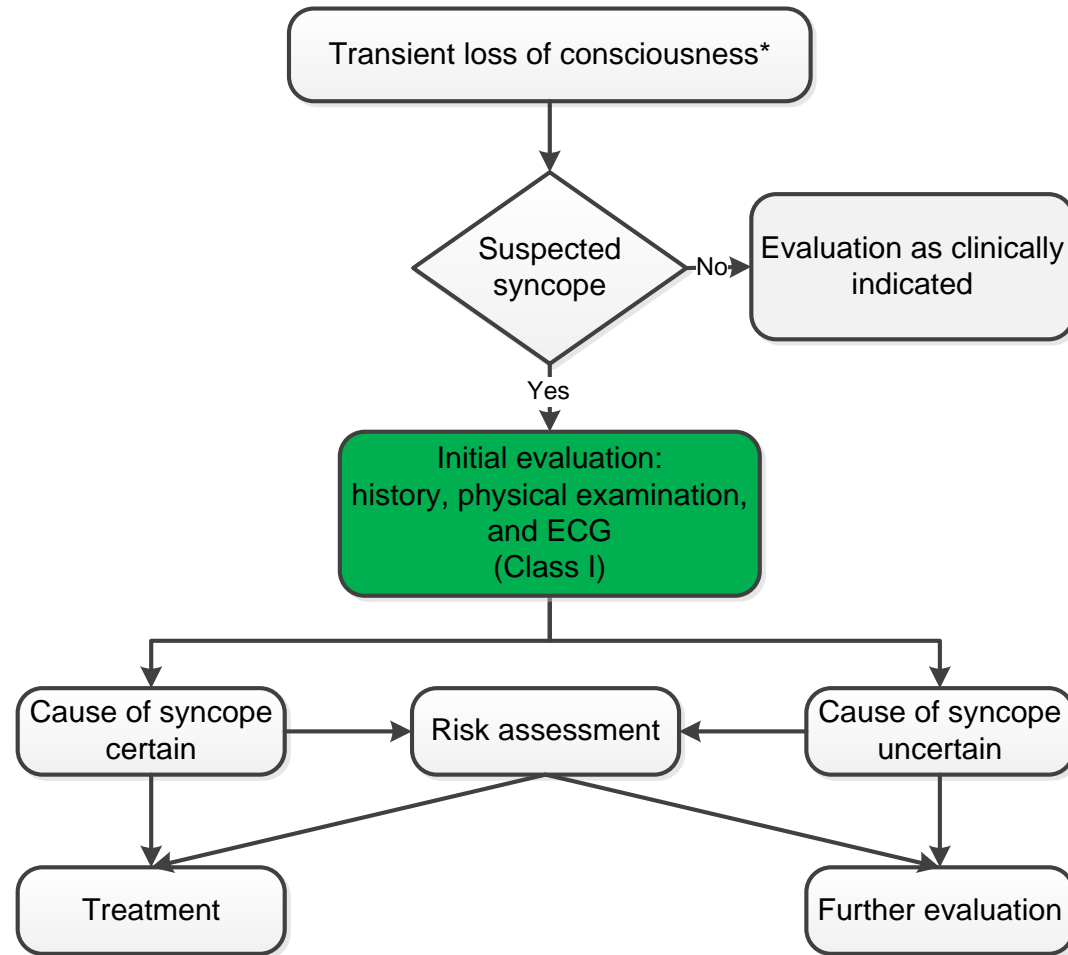


Recovery Position



General Principles

Syncope Initial Evaluation



*See relevant terms and definitions in Table 3.

Colors correspond to Class of Recommendation in Table 1. This figure shows the general principles for initial evaluation of all patients after an episode of syncope. ECG indicates electrocardiogram.