

# Syncope



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# Definition



- Syncope is a sudden, brief loss of consciousness
- Associated with loss of postural tone from which recovery is spontaneous.
- As much as up to 15 % of children experience a syncopal episode prior to the end of adolescence

# Question



- Patient is a 10 yo M who presents to ED with an episode of fainting during sports class today. Patient had a recent bout of gastroenteritis and has had decreased PO intake x last 2 days. Patient got up from stretching on the floor, felt light-headed and clammy, and then fainted. Patient woke-up 2 seconds later. First such event. No sig past medical history. Not on medications. ROS otherwise negative.
- Initial work-up in ED, EKG –NSR, POC Glucose – 100. CBC - pending.

# Physical Exam



- **Vitals**

- BP sitting down 100/65, standing BP 80/60
- HR 68
- SpO<sub>2</sub> 100
- RR 20
- T 37.2

# Physical Exam Cont



- **PE**

- GEN: Alert, no acute distress
- Skin: Warm, pink, intact
- Head: Normocephalic, atraumatic
- Neck: Supple
- Eyes: EOMI, PERLA, Normal conjunctiva
- Ears, nose, throat, mouth: TM clear, dry mucous membranes
- Respiratory: CTAB, breath sounds equal
- CV: RRR, no murmurs, rubs or gallops appreciated.
- GI: Soft, ND, NT, BS present
- Neuro: No focal deficits, AAOx3

# Question



- Based on the presentation, H&P, what is your most likely differential diagnosis?
  - A. Hypoglycemia
  - B. Hypertrophic Cardiomyopathy
  - C. Vasovagal
  - D. Orthostatic hypotension

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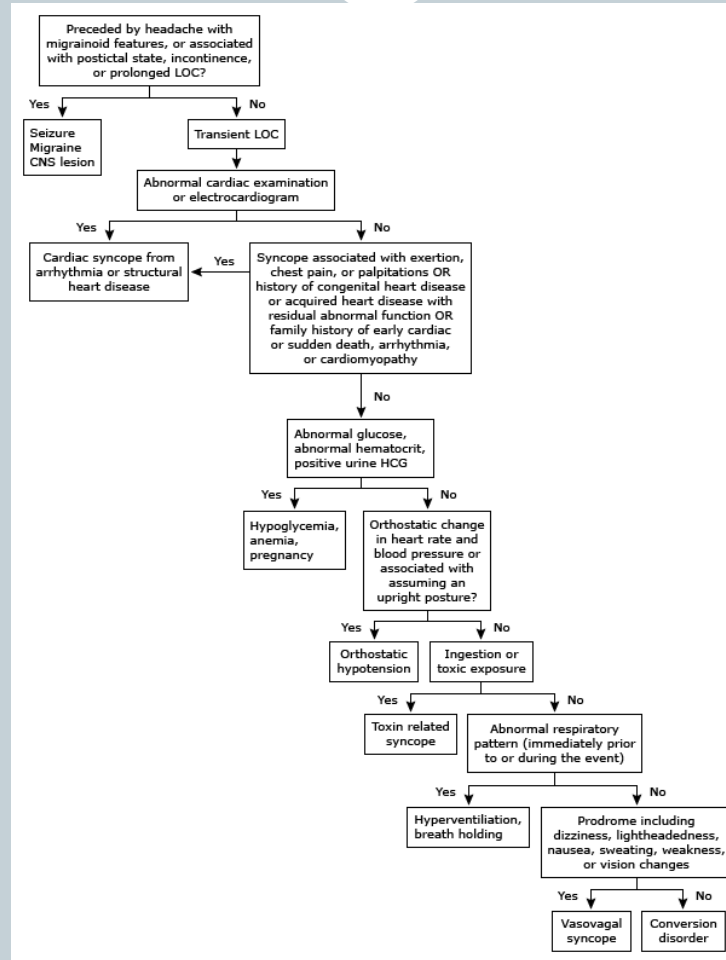
# Orthostatic Hypotension



- **Orthostatic hypotension**
  - Defined as systolic blood pressure decrease of at least 20 mm Hg
  - Diastolic blood pressure decrease of at least 10 mm Hg within three minutes of standing.
  - HR increase > 20.
  - OR sitting to standing triggers symptoms reported.
- Can result from volume depletion, pregnancy (venous pooling), anemia, anorexia nervosa, and medications that alter vasomotor tone and heart rate.
- In this case, the patient was likely volume depleted 2/2 to gastroenteritis.



# Why not the others? Use Syncope Algorithm



# Common causes of Syncope



- **Common conditions that cause syncope include**
  - Vasovagal syncope
  - Breath holding spells
  - Orthostatic hypotension
  - Toxic exposures
  - Hypoglycemia
  - Arrhythmias

# Life-threatening conditions



- Life-threatening conditions that cause syncope and require further work-up:
  - primary electrical disturbances (either congenital or acquired, such as from a drug effect or an electrolyte disturbance)
  - structural heart disease (HCM)
  - Anaphylaxis
  - Heat illness.

# Mimic



- Conditions that can mimic syncope include
  - seizures
  - migraine syndromes
  - hysteria
  - hyperventilation

# ED Pearls



- **ALWAYS** do an EKG, if any abnormalities consult Cardio
  - Short PR (WPW), long PR (AV conduction block), narrow/deep QRS(HCM), QT interval (long QT syndrome can be associated with congenital syndromes/meds)
- Do a thorough cardiac exam
- Measure orthostatic vitals
- Look for signs of injury or evidence of seizure ( i.e. tongue biting)
- Testing- Urine Preg if female/menstruating, POC Glucose, CBC
- Neurologic imaging not necessary unless focal deficit

# References



- “Causes of Syncope in Children and Adolescents.”  
*UpToDate*, 28 Nov. 2018,  
[www.uptodate.com/contents/causes-of-syncope-in-children-and-adolescents](http://www.uptodate.com/contents/causes-of-syncope-in-children-and-adolescents).