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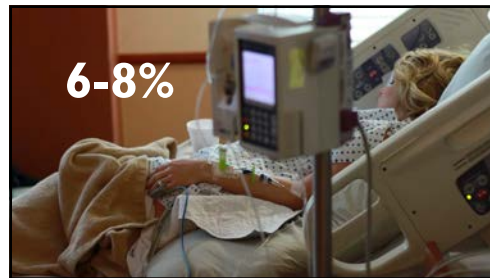
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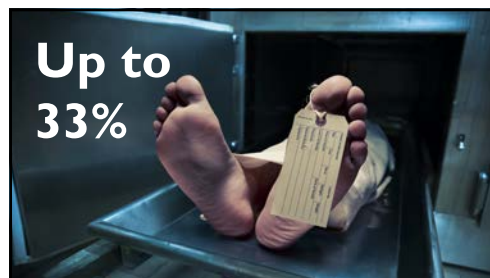
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What is syncope?

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What is syncope?

- Transient loss of consciousness
- Complete return to baseline
- No medical intervention

FAINT PASS OUT BLACK OUT
 D.F.O.

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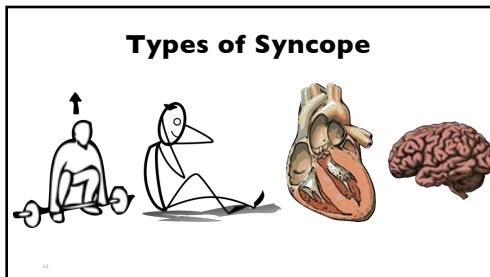
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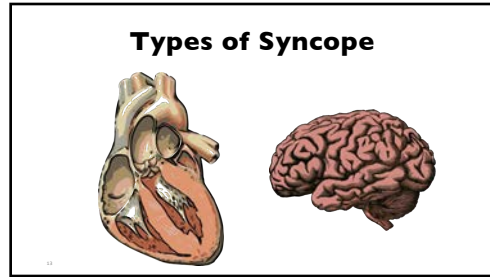
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Presyncope
=
Syncope

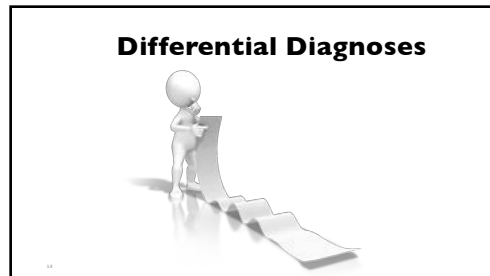
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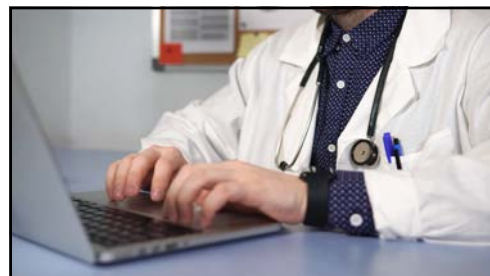
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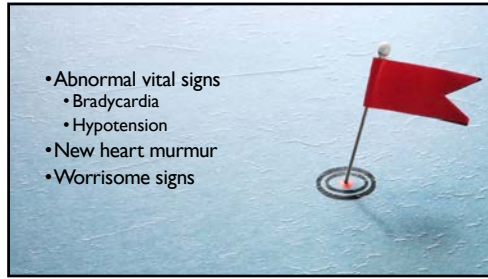


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- No or short prodrome
- Palpitations during prodrome
- Prolonged length of syncope
- Exertional
- Syncope while supine or sitting
- Worrisome symptoms
- PMH of heart disease
 - MI, CABG, Valve Dz
- Family history of SCD



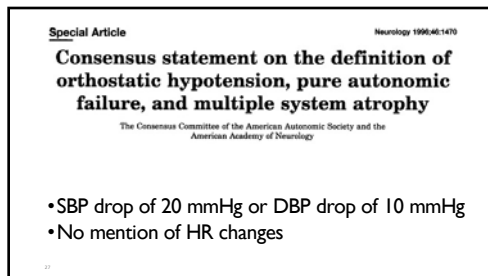
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Autonomic Neuroscience: Basic and Clinical 303 (2015) 96–98

Contents lists available at ScienceDirect

Autonomic Neuroscience: Basic and Clinical

Journal homepage: www.elsevier.com/locate/autneu

Consensus statement on the definition of orthostatic hypotension, neurally mediated syncope and the postural tachycardia syndrome

- No changes to the definition
- No mention of HR changes...again

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been accompanied by characteristic autonomic symptoms and signs, while in the elderly, typical autonomic symptoms are less frequent. Central nervous system hyperactivity, such as depression, anxiety, and obsessive-compulsive disorder, may also be associated with orthostatic hypotension.


4. Postural tachycardia syndrome

4.1. Definition

The postural tachycardia syndrome (POTS) is characterized by a standing heart rate increase of ≥30 beats/min within 10 min of standing in the absence of autonomic dysfunction. The standing heart rate for all subjects is after a 10-min supine rest. This criteria may not be applicable for individuals with low resting heart rates (e.g., athletes) and ≥10 beats/min the required increase is at least 40 beats/min. The orthostatic tachycardia may be accompanied by symptoms of cerebral hypoperfusion and autonomic instability that are defined by orthostatic:

4.2. Orthostatic and clinical features

The prevalence of POTS is higher in women. The syndrome is characterized by symptoms of cerebral hypoperfusion, such as lightheadedness, visual blurring, or near syncope, palpitations, tachycardia, and weakness. Symptoms of the legs, such as fatigue, muscle fatigue, cramp, numbness, tingling, or pain, are also common. Symptoms of the head, such as dizziness, headache, and blurred vision, are also common. Symptoms of the neck, such as dizziness, headache, and blurred vision, are also common. Symptoms of the chest, such as palpitations, tachycardia, and weakness, are also common. Symptoms of the abdomen, such as bloating, constipation, and diarrhea, are also common. Symptoms of the bladder, such as urinary frequency, urgency, and incontinence, are also common. Symptoms of the reproductive system, such as menstrual irregularities, are also common. Symptoms of the endocrine system, such as hypothyroidism, are also common. Symptoms of the immune system, such as autoimmune disorders, are also common. Symptoms of the nervous system, such as anxiety, depression, and obsessive-compulsive disorder, are also common. Symptoms of the cardiovascular system, such as orthostatic hypotension, are also common. Symptoms of the respiratory system, such as shortness of breath, are also common. Symptoms of the gastrointestinal system, such as bloating, constipation, and diarrhea, are also common. Symptoms of the musculoskeletal system, such as muscle fatigue, cramp, and numbness, are also common. Symptoms of the integumentary system, such as lightheadedness, visual blurring, and weakness, are also common. Symptoms of the sensory system, such as dizziness, headache, and blurred vision, are also common. Symptoms of the motor system, such as fatigue, muscle fatigue, cramp, numbness, tingling, or pain, are also common. Symptoms of the autonomic system, such as orthostatic tachycardia, are also common. Symptoms of the endocrine system, such as hypothyroidism, are also common. Symptoms of the immune system, such as autoimmune disorders, are also common. Symptoms of the nervous system, such as anxiety, depression, and obsessive-compulsive disorder, are also common. Symptoms of the cardiovascular system, such as orthostatic hypotension, are also common. Symptoms of the respiratory system, such as shortness of breath, are also common. Symptoms of the gastrointestinal system, such as bloating, constipation, and diarrhea, are also common. Symptoms of the musculoskeletal system, such as muscle fatigue, cramp, and numbness, are also common. Symptoms of the integumentary system, such as lightheadedness, visual blurring, and weakness, are also common. Symptoms of the sensory system, such as dizziness, headache, and blurred vision, are also common. Symptoms of the motor system, such as fatigue, muscle fatigue, cramp, numbness, tingling, or pain, are also common. Symptoms of the autonomic system, such as orthostatic tachycardia, are also common.



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CLINICAL STATEMENTS AND GUIDELINES

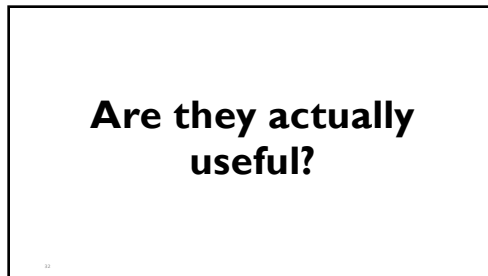
2017 ACC/AHA/HRS Guideline for the Evaluation and Management of Patients With Syncope: Executive Summary: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhythm Society

- Orthostatic vital signs are recommended in every patient
- Positive orthostatic vital signs more indicative of benign etiology

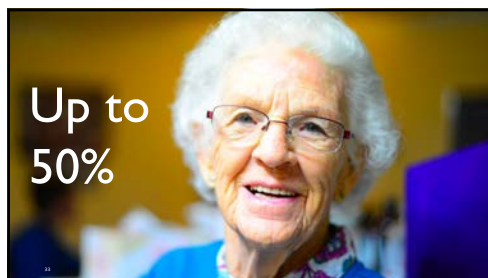
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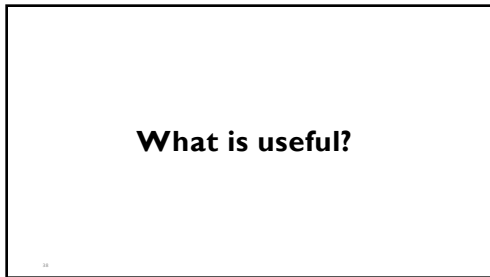
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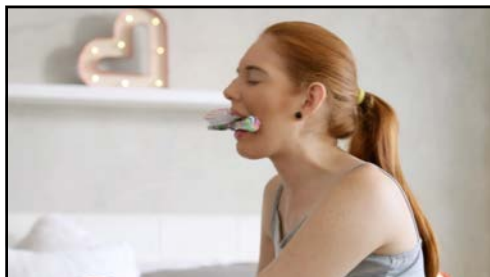
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Bottom Line

- Orthostatic vital signs do not reliably diagnose mild to moderate volume loss.
- Symptoms upon rising are more indicative of volume loss.

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“Syncope labs”

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“if clinically indicated”

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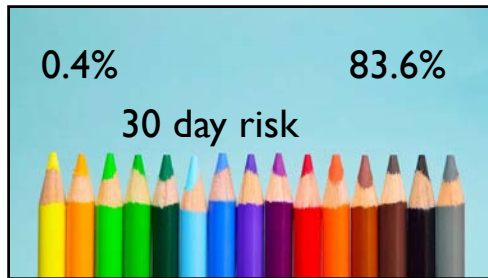
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CSRS	
Predisposition for vasovagal syncope	-1
Heart disease	1
SBP <90 or >180	2
Elevated troponin	2
Abnormal QRS axis	1
Prolonged QT interval	1
Wide QRS complexes	2
ED diagnosis of vasovagal syncope	-2
ED diagnosis of cardiac syncope	2

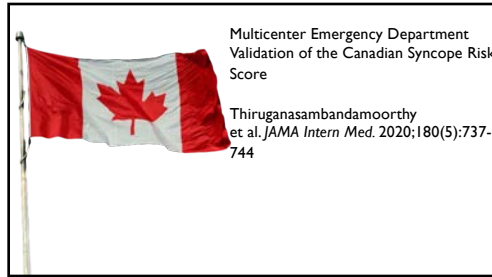
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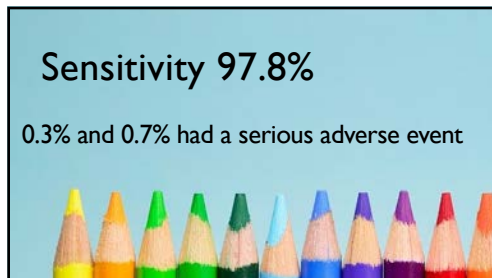
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Specificity 44.3%

19.2% and 51.3% had a serious adverse event



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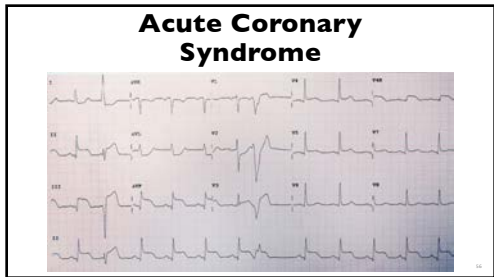
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7 things to look for on EKG!

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AV Blocks

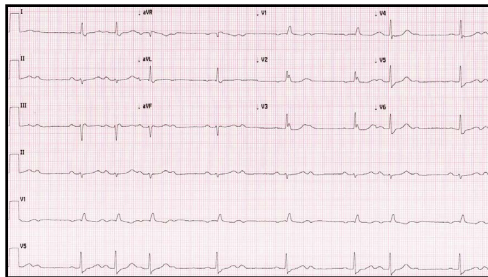
- Mostly 2nd and 3rd degree AV blocks
- Predisposes to syncope through:
 - AV dissociation
 - Sinus pause

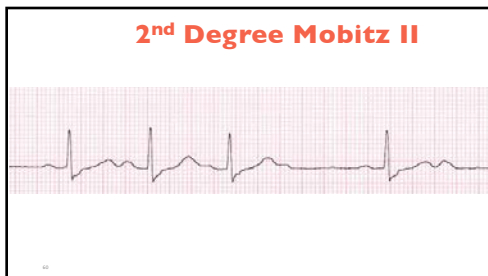
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2nd Degree Mobitz II

- Fixed prolonged PR interval
- Dropped QRS complex

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3rd Degree AV Block

- Complete dissociation of atria and ventricles
- P waves operate independently of QRS complexes

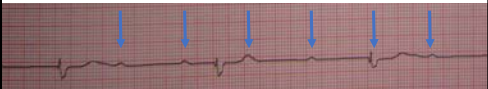
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3rd Degree AV Block



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3rd Degree AV Block



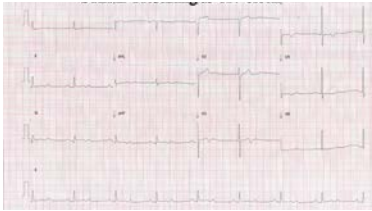
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**2:1 AV
Dissociation**

- PQRS complex and then dropped QRS complex
- Think of as between 2nd and 3rd degree


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2:1 AV Dissociation

An ECG strip showing a regular rhythm with a rate of approximately 75 bpm. The rhythm is characterized by a 2:1 AV dissociation, where every second P wave is followed by a QRS complex, and the other P waves are not followed by a QRS complex. The P waves are upright in leads I, II, and aVF, and inverted in leads V1 and V2. The QRS complexes are narrow and have a Q wave in lead I, a deep S wave in lead V1, and a tall R wave in lead V6.

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2:1 AV Dissociation

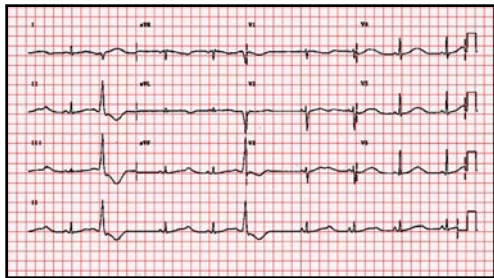
An ECG strip showing a regular rhythm with a rate of approximately 75 bpm. The rhythm is characterized by a 2:1 AV dissociation. Blue arrows point to the P waves that are not followed by a QRS complex. The P waves are upright in leads I, II, and aVF, and inverted in leads V1 and V2. The QRS complexes are narrow and have a Q wave in lead I, a deep S wave in lead V1, and a tall R wave in lead V6.

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Prolonged QT

- QTc > 450ms
- Can be congenital or acquired
- Most commonly caused by medications
- Will progress to TdP

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Wolf-Parkinson-White

- Delta waves on ECG
- Short PR interval
- Problem=atrial fibrillation w/WPW
 - Ventricular rate of ~300
 - Wide QRS complex


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Wolf-Parkinson-White

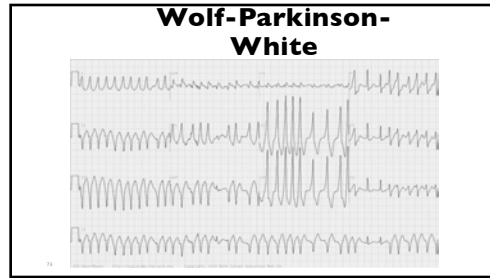


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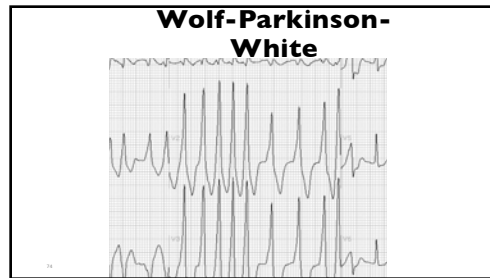
Wolf-Parkinson-White



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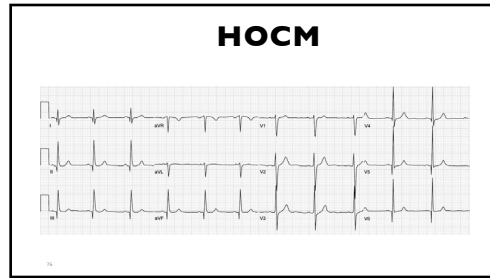
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HOCM

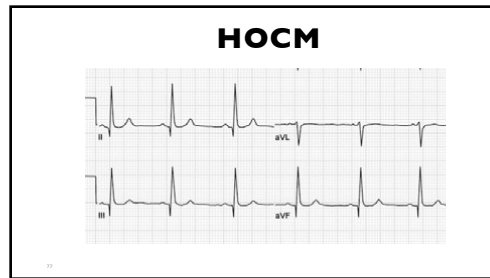
- Obstructive cardiomyopathy
- Symptoms with exertion

- LVH on EKG
- Dagger-like Q waves

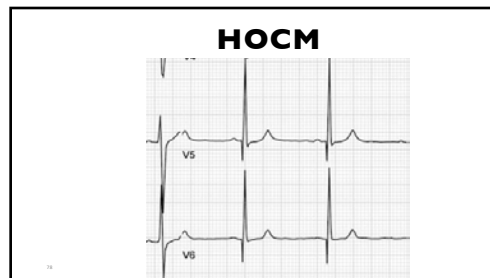
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Brugada

- Sodium channelopathy
- 3 types
- EKG findings
 - Incomplete RBBB pattern
 - ST elevation in V1 – V3
 - Coved vs. Saddle

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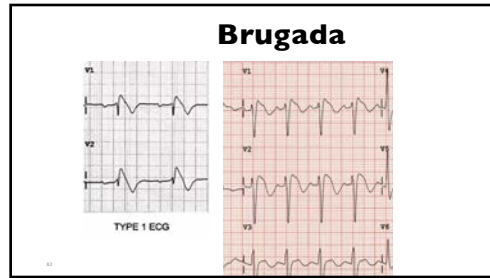
Brugada

TYPE 1 ECG TYPE 2 ECG TYPE 3 ECG

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Brugada

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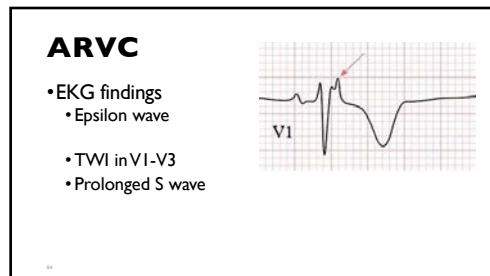


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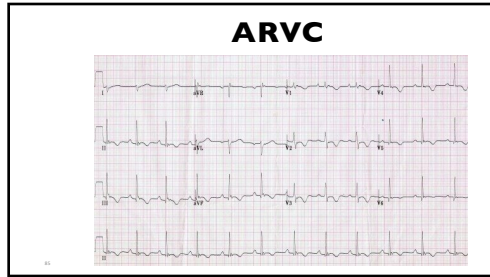
ARVC

- Arrhythmogenic right ventricular CM
- Fat deposition in the myocardium
- Causes decreased electrical conduction
- Predisposes to ventricular dysrhythmias

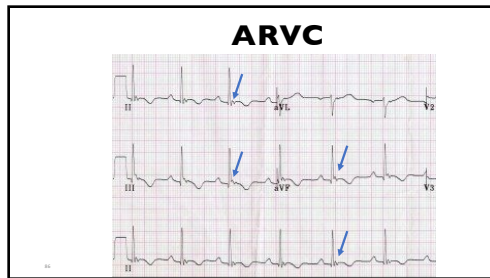
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- Bottom Line**
- 7 DEADLY EKG findings in syncope
 - ACS
 - AV blocks
 - ARVC
 - Brugada
 - HOCM
 - Prolonged QT
 - WPW

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Take Home Pearls

- A good history and physical dictates the workup. There are no "syncope labs"!
- Remember the worrisome signs and symptoms for syncope. Focus on what happened surrounding the syncope.
- Orthostatics are useful for bringing on symptoms to assess for volume status. The numbers aren't helpful.
- Remember the 7 deadly EKG findings for syncope

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