

Faculty Development: Key Teaching Points	
Start with a foundation	General assessment, mentation, perfusion, vital signs
Auscultation: BASIC steps first	Establish rate and rhythm
	Distinguish S1 from S2 <ul style="list-style-type: none"> Challenging with HR>100 S2 generally loudest at LUSB, RUSB Carotid upstroke between S1 and S2
Focus attention	One thing at a time. <ul style="list-style-type: none"> Focus on systole at each location Focus on diastole at each location Avoid starting with the most prominent finding that happens to draw attention.
Characterizing a murmur	<ul style="list-style-type: none"> Location. Where loudest? Radiation? Timing, pattern of intensity. Crescendo, holosystolic, etc. Quality. Harsh, blowing, musical, etc.

Specific Murmurs	Associated features
Is it Aortic Stenosis? (AS) <ul style="list-style-type: none"> Loudest at RUSB, +/- apex. May radiate to R clavicle, R carotid. Systolic. Crescendo (predominant). Harsh quality 	More severe AS <ul style="list-style-type: none"> Diminished S2 intensity Late peaking murmur Delayed carotid upstroke Sustained apical impulse
Is it Mitral Regurgitation? (MR) <ul style="list-style-type: none"> Loudest at apex. May radiate to axilla. Holosystolic Blowing quality 	<ul style="list-style-type: none"> May obliterate S2
Is it Tricuspid Regurgitation? (TR) <ul style="list-style-type: none"> Loudest at LLSB Holosystolic Blowing quality 	<ul style="list-style-type: none"> S2 usually heard clearly ↑ intensity w/ inspiration Prominent v wave
Is it Hypertrophic Cardiomyopathy? <ul style="list-style-type: none"> Loudest at LLSB, +/- toward apex. Midsystolic. Harsh quality. Quieter after stand-to-squat. Louder after squat-to-stand. 	
Is it Aortic Regurgitation? (AR) <ul style="list-style-type: none"> Left parasternal border at 3rd-4th intercostal space Early diastolic, decrescendo Blowing quality 	<ul style="list-style-type: none"> Listen while patient sits up, leans forward Wide pulse pressure Water hammer pulse

This patient presents for a cardiac exam because they were told in the past that a murmur was present. Examine to evaluate whether the murmur is likely to be caused by structural heart disease.

	Physical Exam Technique	Areas for Feedback – Did the learner...
General assessment and vital signs	<ul style="list-style-type: none"> General appearance, comfort level Mobility, any need for assistance Vital signs Peripheral perfusion, pulse examination 	<ul style="list-style-type: none"> Ask the patient to change into a gown? Check independence with mobility/ambulation? Notice any abnormalities of vital signs, including pulse pressure?
Inspection of neck veins	<ul style="list-style-type: none"> Examine the right side if possible Identify carotid movements (mostly outward) Identify venous movements (mostly inward; height changes in response to respirations, angle of elevation of head, and increases with pressure on abdomen) 	<ul style="list-style-type: none"> Adjust the head of the bed until the top of the venous column became visible? Examine for prominent v waves if a murmur of TR is suspected?
Palpation	<ul style="list-style-type: none"> Palpate the chest wall to detect the apical impulse, focusing on 5th intercostal space in midclavicular line, then surrounding area Examine carotid pulse for volume and timing 	<ul style="list-style-type: none"> Examine patient in supine position? Comment on location of apical impulse relative to midclavicular line?
Heart auscultation	<ul style="list-style-type: none"> First establish heart rate and rhythm Distinguish S1 from S2 Listen to systole and diastole at RUSB, LUSB, LLSB, and apex Listen for S3 and S4 	<ul style="list-style-type: none"> Comment on regularity of rhythm? Palpate the carotid while auscultating? (to establish timing of systole or evaluate for pulsus parvus et tardus if AS suspected) Listen for S3 with bell with patient in left lateral decubitus position if not heard supine?

Specific Murmurs...	Associated features
Is it a Functional Murmur? <ul style="list-style-type: none"> Left sternal border. Early or mid-systolic. Short duration. Grade 2 or less. Intensity diminishes with maneuvers that decrease venous return (standing up, sitting up, Valsalva). 	<ul style="list-style-type: none"> Normal JVP Normal apical impulse Normal S1, S2 Physiologic splitting of S2 No S3, S4 Normal pulse exam