

10 MinuteMoment

RESPIRATORY SYSTEM EXAM FOR DYSPNEA



FACULTY DEVELOPMENT: A key tip for a respiratory system examination is to remember that there are clues to cardiopulmonary disease beyond the chest itself. It is also important to encourage learners to use observation, palpation and percussion of the chest before auscultation, as oftentimes the stethoscope will confirm that which you already suspect.

Learning Point 1 - Observation

“The whole art of medicine is in observation.” Sir William Osler¹

- Does the patient speak in full sentences? Do they have to stop and catch their breath? If possible, walk with your patient to stress the system if they are not dyspneic at rest.
- Respiratory rate is often inaccurately recorded (beware the “normal” respiratory rate of 20) - Match your breathing to the patient to see if you feel short of breath.
- Accessory muscle use indicates an increased load and could signify chronic obstruction (+LR 3.3)²
- Nasal flaring (+LR 4.6), suprasternal (+LR 4) and intercostal retractions (+LR 2.2) may indicate acidosis
- Pursed lip breathing can indicate airflow obstruction (+LR 3.3)
- Abdominal paradox (the inward movement of the abdomen on inspiration) could signal diaphragmatic fatigue or paralysis (+LR 3.2)
- Asymmetric chest expansion is indicative of unilateral disease, particularly pneumonia or pleural effusion (+LR of 44 for detecting pneumonia in a patient with fever and cough)
- If the diaphragm is flattened from hyperinflation, it will pull the ribcage inwards during inspiration (+LR 4.2 for detecting COPD)

Learning Point 2 – Palpation/Perussion

- If you don’t see asymmetric chest wall expansion, place your hands on the chest and back to feel for asymmetry.
- Percuss the chest before auscultation using either the indirect (i.e., striking your finger placed against the chest wall with your index or middle finger of the other hand) or direct method (i.e., using the fingertips of one hand to deliver and feel the percussion blow).
- Hyperresonance on percussion detects COPD (+LR 5)
- Dullness to percussion indicates a pleural effusion (+ LR 5)

Learning Point 3 – Auscultation

- Symmetric decreased breath sounds (BS) increase COPD’s likelihood (+LR 3.5)
- Decreased BS increase pleural effusion’s likelihood (+LR 5.2, -LR 0.1)
- Bronchial BS can detect pneumonia in patients with cough and fever (+LR 3.3)
- Wheeze without forced expiration increases airflow obstruction likelihood (+LR 2.6)
- Early inspiratory crackles increase the likelihood of COPD (+LR 14.6)
- Egophony in patients with fever & cough increases pneumonia’s likelihood (LR 4.1)

^[1] Silverman ME, Murray TJ, Bryan CS, eds. The Quotable Osler. Philadelphia: Versa Press; 2008.

^[2] All likelihood ratios (LRs) are from McGeer, Stephen. Evidence Based Physical Diagnosis. 5th Ed. Elsevier 2022.

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This patient presents with DYSPNEA suspected to be of pulmonary origin. Please examine them to decide what further management is needed.

	PHYSICAL EXAM TECHNIQUE	Y / N	AREAS FOR FEEDBACK
INSPECTION	Observe the patient <ul style="list-style-type: none"> • Did the learner observe the patient’s breathing? • Did they notice executional dyspnea if present? • Did they uncover the chest for direct observation? Look Outside the chest <ul style="list-style-type: none"> • Did the learner look at the hands for signs of clubbing, arthritis/synovitis, cyanosis, rash, nail changes, palmar crease pallor? • Did the learner look for lower extremity edema? • Did the learner look for jugular venous distention and elevated jugular venous pressure? 		
	Palpate the chest wall <ul style="list-style-type: none"> • Did the learner observe and palpate chest and abdominal wall motion during respiration? • Did the learner palpate the chest for symmetry? Percuss the chest wall <ul style="list-style-type: none"> • Did the learner percuss the chest both anteriorly and posteriorly? • Did the learner assess for tactile fremitus* ? 		
AUSCULTATION	Auscultate the chest wall <ul style="list-style-type: none"> • Did the learner auscultate in multiple locations including anterior, posterior & mid-axillary line? • Did the learner remember not to auscultate through clothing or a gown? • Did the learner assess for vocal resonance or egophony# if appropriate? 		
SPECIAL MANEUVERS	Additional information on maneuvers <ul style="list-style-type: none"> • *FREMITUS is appreciated when placing fingertips on the chest and asking the patient to say “toy truck” or “99”. <i>Decreased fremitus</i> indicates pleural effusion (+LR 6) while <i>normal fremitus</i> argues against a pleural effusion. <i>Increased fremitus</i> might indicate a consolidation. • *EGOPHONY is a “particular nasal quality” sound of the patient’s voice where “EE” sounds like “AH” or E—>A change. If present, confirm its absence on the contralateral chest side. 		
	Did the learner have an organized and structured approach to the exam?		
	Did the learner maintain the patient’s comfort and well being?		