

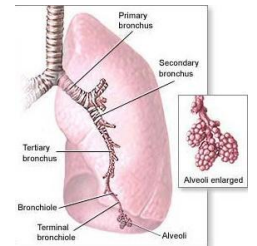
## RESPIRATORY EXAM – THE CHEST EXAM

Remember “IPPA”:

	POSTERIOR CHEST	ANTERIOR CHEST
<b>INSPECT</b> <i>Don't miss any abnormalities</i>	<b>Position:</b> Patient sitting, (arms crossed on shoulders) <b>Anterior and Posterior, assess:</b> <ul style="list-style-type: none"> <li>Contour, asymmetry, Skin</li> <li>Rate, rhythm, depth and effort of breathing</li> </ul>	
<b>PALPATE</b>	<b>a) Feel for tenderness and/or abnormalities</b>	
	T10	<b>b) CHEST EXPANSION</b> <ul style="list-style-type: none"> <li>raise skin folds between thumbs</li> </ul>
	x4	<b>c) TACTILE FREMITUS</b> <ul style="list-style-type: none"> <li>say “99”, use ulnar surface of hand</li> </ul>
<b>PERCUSS</b> <i>Lightly tap chest to detect resonance.</i>	x 7	<b>a) TAP USING DIP Joint</b>
	<b>b) Diaphragmatic Excursion</b> <ul style="list-style-type: none"> <li>Max expiration → max inspiration</li> </ul>	
<b>AUSCULTATION</b> <i>Listen to breath sounds using stethoscope</i>	x 7	<b>MOUTH OPEN, DEEP BREATHS, LISTEN TO INSPIRATION &amp; EXPIRATION</b>
	If breath sounds are abnormal, repeat auscultation, however, have patient say “99”, “ee” each time the stethoscope makes contact with the patient’s skin.	
	<b>a) Bronchophony</b>	Patient say “99”  <b>Normal:</b> clarity of “99” decreases as you auscultate to peripheral lung fields <b>Abnormal:</b> in pneumonia, where there is consolidation (fluid) in the lungs, there is medium for sound to travel and “99” will sound clear.
	<b>b) Egophony</b>	Patient say “eee”  <b>Normal:</b> “ee” should sound like “ee” on auscultation. <b>Abnormal:</b> If it’s abnormal, you will hear higher pitched sound, “ee” will actually sound like “aaa” → this indicates consolidation (fluid in the lungs)
	<b>c) Whisper Pectoriloquy</b>	Patient whispers “1, 2, 3.”  <b>Normal:</b> “1, 2, 3” should not be discernable on auscultation <b>Abnormal:</b> e.g. pneumonia, where there is fluid in the lungs, there is a medium for sound to travel and “1, 2, 3” will sound clear and loud.

### NORMAL BREATH SOUNDS: Vesicular, Bronchovesicular Bronchial, Tracheal

*Pearl: The respiratory system is composed of a network of airways. What breath sound you hear will depend on what area of the chest you auscultate. Each area of the chest has a different “normal” breath sound. (e.g. Over the trachea located over the middle of the chest, which has a large diameter, the breath sounds are loud and harsh & heard during inhalation and exhalation, while vesicular sounds are very soft because the diameter of that airway is very small, and often only heard when patients inhale). The larger the diameter, the louder and more low pitched the sound of air through the airway. The smaller the diameter, the softer and higher pitched the sound of air through the airway.*



Vesicular (A+P)	Bronchovesicular (A + P)	Bronchial (Anterior)	Tracheal
<p><b>Vesicular</b> Small Airway</p>	<p><b>Bronchovesicular</b> Small to Medium airway</p>	<p><b>Bronchial</b> Medium airway</p>	Heard over the trachea. Sounds like air being blown through pipes. <b>Large airway</b>

### ABNORMAL BREATH SOUNDS:

Crackles	Wheezing	Stridor
<p><b>Crackle</b></p> <p>Often compared to what rice krispie cereal sounds like after putting milk in. Occurs when there is obstructed area (represents blocked, collapsed areas opening with inhalation)</p>	<p><b>Wheeze</b></p> <p>heard at end of inspiration or beginning of expiration. Similar to how you narrow diameter of your mouth to whistle, the airway lumen diameter decreases causing a “whistling” or “wheezing” sound.                      Low pitch wheezing → large airways (because larger diameters);                      • High pitch wheezing → smaller airways diseased (because smaller diameter)</p>	<p><b>Stridor</b></p>

**References:**

- Bickley, L. Bates' Guide to the Physical Examination And History Taking. 10<sup>th</sup> ed. 2008.
- [http://www.cvmbs.colostate.edu/clinsci/callan/breath\\_sounds.htm](http://www.cvmbs.colostate.edu/clinsci/callan/breath_sounds.htm)

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