Adult History & Physical Examination

A Practical Respiratory Care Approach

Learning Objective: Elicit and explain the significance of findings from a patient history and physical examination.

The Assessment Framework

1. HISTORY	2. OBSERVE	3. EXAMINE	4. INTERPRET
Complaint • timeline • exposures • baseline	Appearance • work of breathing • mental status	Inspect • palpate • percuss • auscultate	Combine findings • trend • reassess

1. Focused Medical History

- Start with the story: Who is the patient? Why are they here? What context changes how you interpret the complaint?
- Chief complaint: the patient's primary reason for seeking care, ideally in their own words.
- History of present illness (HPI): onset, progression, severity, triggers, relieving factors, associated symptoms, and change from baseline.

PQRST: A Simple Symptom Framework

P - Provocation / Palliation	What brings it on? What makes it better?
Q - Quality / Quantity	What does it feel like? How much?
R - Region / Radiation	Where is it? Does it move?
S - Severity	How bad is it? How much does it limit activity?
T - Timing	When did it start? How long? How often? Is it progressing?

History Elements That Change the Clinical Picture

- Past history: respiratory/cardiac disease, previous hospitalizations, surgery, prior intubation or ICU admission.
- Medications and allergies: include recent changes and adverse reactions.
- Baseline respiratory support: oxygen, PAP, inhalers, nebulizers, usual SpO_2, and functional baseline.
- Social history: tobacco, vaping/inhaled products, alcohol/recreational drugs, and route of administration.
- Family history: asthma, early emphysema/alpha-1 antitrypsin deficiency, cystic fibrosis/bronchiectasis, hemoglobin disorders, premature cardiovascular disease, and other inherited conditions.
- Occupational/environmental history: ask about actual tasks and exposures - silica, asbestos, dust, birds, organic antigens, fumes, chemicals, aerosols, disinfectants, latex, mold, hot tubs, woodworking, pets/birds.

Smoking exposure: Pack-years = packs smoked per day × years smoked. Ask about vaping and other inhaled products separately.

Review of Systems: Look Beyond the Lungs

- Cardiovascular: edema, palpitations, syncope, orthopnea.
- GI: reflux, swallowing problems/aspiration risk, weight loss.
- Neurologic: weakness, altered mental status, headache.
- Constitutional: fever, chills, night sweats, fatigue.
- Musculoskeletal/allergic/immune: chest wall limitation, pain, weakness, rhinitis, exposures, systemic disease.

Key Cardiopulmonary Symptoms

Cough	Duration; dry vs productive; day/night/positional pattern; triggers; smoking/vaping; ACE inhibitor; infection, reflux, asthma; change from baseline.
Dyspnea	Measure severity by function. Ask what activity the patient could do previously but cannot do now. Assess exertional, resting, and positional symptoms.
Sputum / hemoptysis	Amount, character, timing, change from baseline. Color alone is not diagnostic. Distinguish blood streaking from frank hemoptysis and quantify when possible.
Chest / systemic clues	Chest discomfort, edema, syncope, fever, chills, night sweats, weight loss, fatigue.
Upper airway / neurologic	Hoarseness, stridor, noisy breathing, snoring, headache, confusion, personality or mental-status change.

2. Physical Examination: Observe First

- General appearance: comfort vs distress, body habitus, posture.
- Breathing: rate, depth, rhythm, pattern, effort.
- Interaction: speech, attention, mental status.

Bedside habit: Look at the patient before focusing on the monitor. Then compare the clinical appearance with the numbers.

Level of Consciousness & Vital Signs

- Hypoxemia may cause restlessness, agitation, or confusion. Hypercapnia may cause headache, confusion, and somnolence.
- Glasgow Coma Scale: eye opening 1-4, verbal response 1-5, motor response 1-6; total 3-15. Trend the patient, not just the number.
- Respiratory rate: actually count it; assess rate, rhythm, depth, and effort.
- Heart rate and blood pressure: interpret with perfusion and the overall physiologic response.
- SpO_2 measures oxygen saturation, not ventilation. An acceptable SpO_2 does not exclude dangerous hypercapnia.

Important: Trend + clinical appearance + history makes vital signs useful. A single 'normal' number can be misleading.

Inspection for Increased Work of Breathing

- Position: tripod posture or inability to lie flat.
- Upper airway: nasal flaring or stridor.
- Muscles: accessory muscle use and retractions.
- Speech: full sentences vs only a few words.
- Less visible effort is not always improvement - a tiring patient may become quieter, drowsier, and move less air.

Head, Neck, Abdomen & Extremities

Color / skin	Cyanosis, pallor, diaphoresis. Cyanosis is neither sensitive nor specific enough to replace objective oxygenation assessment.
Pupils	Size, equality, reactivity; consider neurologic disease, trauma, and medication effects.
Trachea / neck veins	Assess tracheal position and JVD. Tracheal deviation is generally a late sign in acute tension pneumothorax.
Abdominal motion	Paradoxical inward movement during inspiration may suggest diaphragmatic dysfunction, paralysis, or severe fatigue.
Extremities	Edema, clubbing, temperature, capillary refill, skin moisture. Clubbing is not simply a marker of chronic hypoxemia.

Tracheal Shift: Think About the Force

- Volume loss can pull toward the affected side: significant atelectasis or fibrotic volume loss.
- Pressure/volume can push away: large tension pneumothorax, large mass, or large effusion.

Do not wait for tracheal deviation: In an unstable patient with sudden deterioration, unilateral absent/reduced breath sounds and hemodynamic compromise, act according to the emergency team's protocol.

3. Focused Chest Examination

Inspect	Configuration, symmetry, breathing pattern.
Palpate	Chest expansion, tenderness, tactile fremitus.
Percuss	Resonance, dullness, hyperresonance.
Auscultate	Air movement, normal breath sounds, adventitious sounds.

Inspection & Palpation

- Inspect symmetry, increased AP diameter/hyperinflation, pectus deformity, kyphosis/scoliosis, trauma/scars, and ventilatory pattern.
- Prolonged expiration may support airflow obstruction; rapid shallow breathing may occur with restriction, pain, fatigue, or physiologic stress.
- Compare chest expansion side to side.
- Tactile fremitus: may increase with lung consolidation when the bronchus is patent; tends to decrease with pleural fluid, pneumothorax, or marked hyperinflation.
- Atelectasis does not automatically mean increased fremitus; airway patency and volume loss matter.

Percussion

Resonant	Expected over normally aerated lung.
Dull	Suggests increased density, such as consolidation or pleural fluid.
Hyperresonant	Suggests more air, such as emphysema or pneumothorax.
Tympanitic	Very air-filled space; interpret cautiously.

Principle: Percussion is supportive. An asymmetric finding that matches abnormalities on inspection and auscultation is more meaningful than percussion alone.

Auscultation Technique

- Use a quiet environment when possible and place the stethoscope directly on skin.
- Ask for slow, deep breaths if tolerated; compare symmetric locations.
- Listen to the entire chest, especially the posterior bases.
- Describe air entry/intensity, location, inspiratory vs expiratory timing, added sounds, and change after cough or treatment.

Normal Breath Sounds

Sound	Quality	Expected location
Tracheal	Very loud, high-pitched	Over trachea
Bronchial	Loud / tubular	Central airways
Bronchovesicular	Intermediate	Near major bronchi
Vesicular	Soft / low-pitched	Peripheral lung fields

Location matters: Bronchial-quality breath sounds heard in the peripheral lung may suggest consolidation.

Adventitious Breath Sounds

Sound	Description	Clinical clue
Crackles	Discontinuous; fine or coarse	Can occur with pulmonary edema, pneumonia, fibrotic lung disease, or atelectatic regions.
Wheeze	Continuous musical sound; usually expiratory	Asthma, COPD, airway edema, or other airway narrowing.
Rhonchus	Low-pitched continuous sound; may change with cough	Often associated with secretions / larger airway sounds.
Stridor	Harsh upper-airway sound; often inspiratory	Upper-airway narrowing; may signal an urgent airway problem.

Key rule: A breath sound is a clue - not a diagnosis. Interpret it with the history, location, vital signs, inspection, percussion, and the patient's trajectory.

Reporting: Make Findings Reproducible

- Avoid vague documentation such as 'abnormal breath sounds.'
- Document type + timing + location + intensity/air entry + response to cough or therapy.

Example: "Fine inspiratory crackles at the right posterior base; unchanged after cough."

Pattern Recognition: High-Yield Examples

Pattern	Supporting findings	Concern
Focal increased density	Fever/productive cough + reduced expansion + dullness + crackles + peripheral bronchial-quality sounds	Focal consolidation, such as pneumonia
Excess pleural air / acute deterioration	Sudden hypoxemia + hypotension + unequal expansion + unilateral absent sounds + hyperresonance	Pneumothorax; tension pneumothorax if hemodynamically unstable

Mini-Case Review

- Progressive dyspnea + 45-pack-year history + chronic morning sputum + declining exercise tolerance: chronic obstructive disease moves higher on the list, but avoid premature closure.
- Asthma patient with RR 34, SpO_2 89% on room air, accessory muscle use, nasal flaring, and 2-3 word speech: significant respiratory distress before auscultation.
- Ventilated trauma patient with sudden hypoxemia/hypotension, absent unilateral breath sounds, and hyperresonance: tension pneumothorax is a major concern; do not wait for tracheal deviation.
- Fever + productive cough + focal dullness + crackles + peripheral bronchial-quality sounds: combined findings support focal consolidation.

Key Takeaways

- History gives context.
- Observation may reveal severity before the monitor does.
- Physical examination provides clues - not isolated diagnoses.
- The strongest assessment comes from findings that agree with one another.
- When findings do not fit, reassess and broaden the differential.
- Reassessment closes the loop after treatment or a change in condition.

Remember: Assess the patient - not an isolated finding. Then reassess as the patient changes.

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