

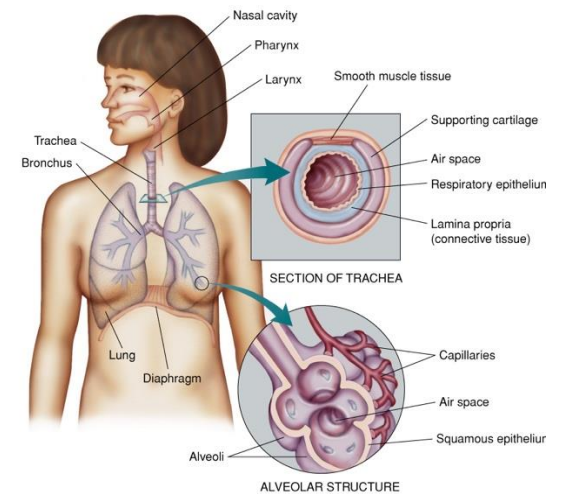
History Taking in Respiratory Conditions



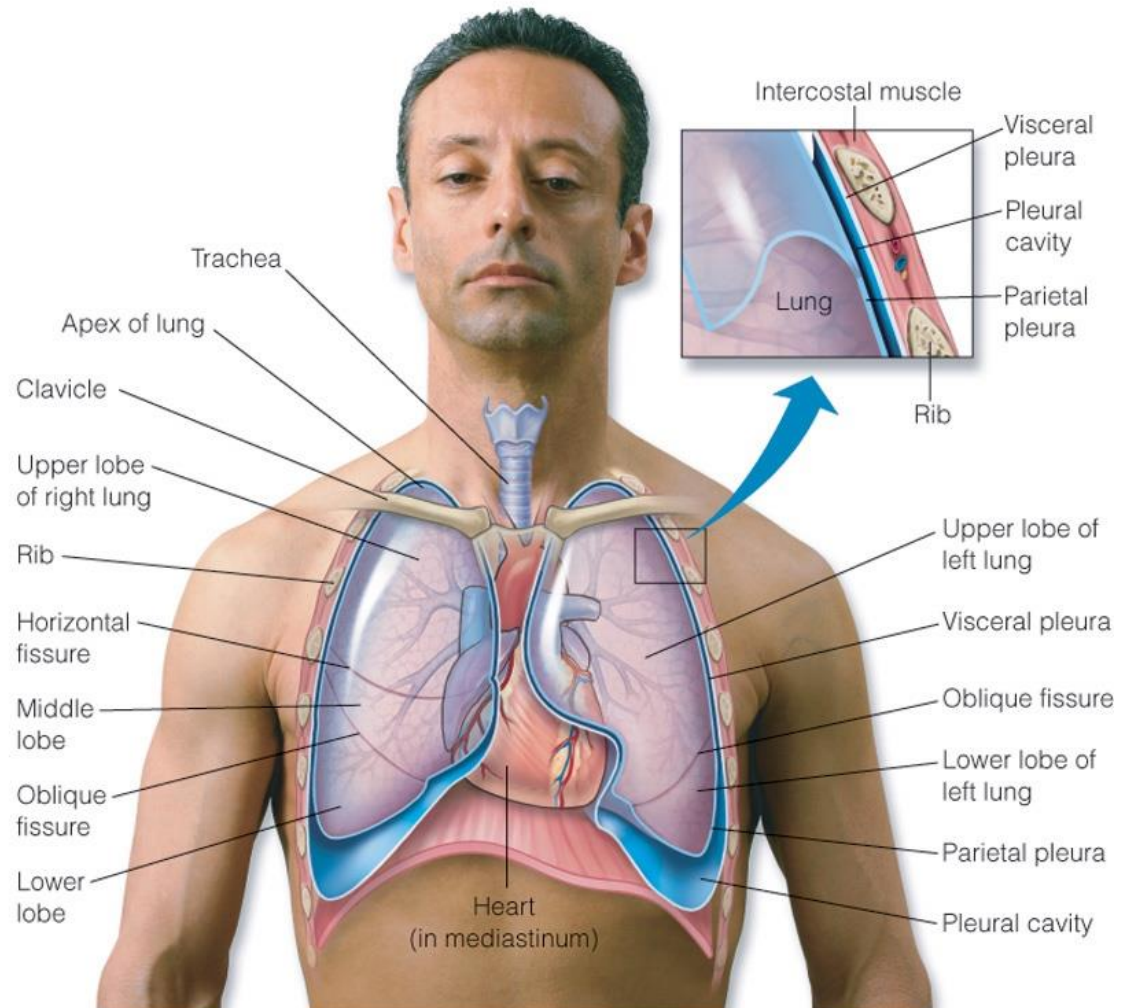
—BELMATT—
HEALTHCARE TRAINING

Overview of Anatomy

- Study the anatomy that you see in this diagram and consider what could go wrong.
- Think of normal and abnormal findings

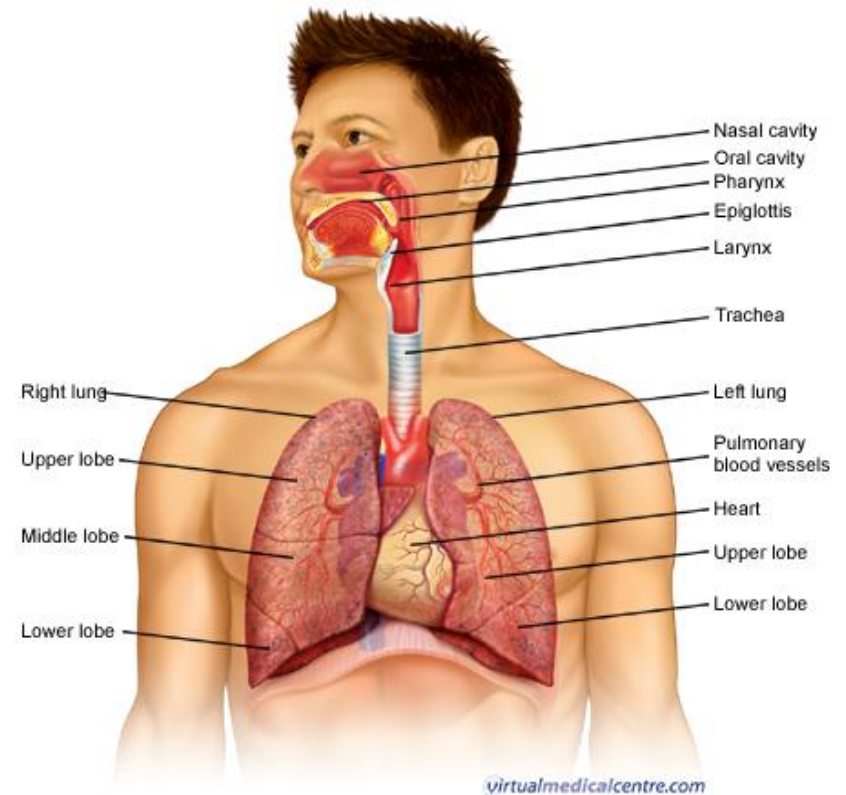


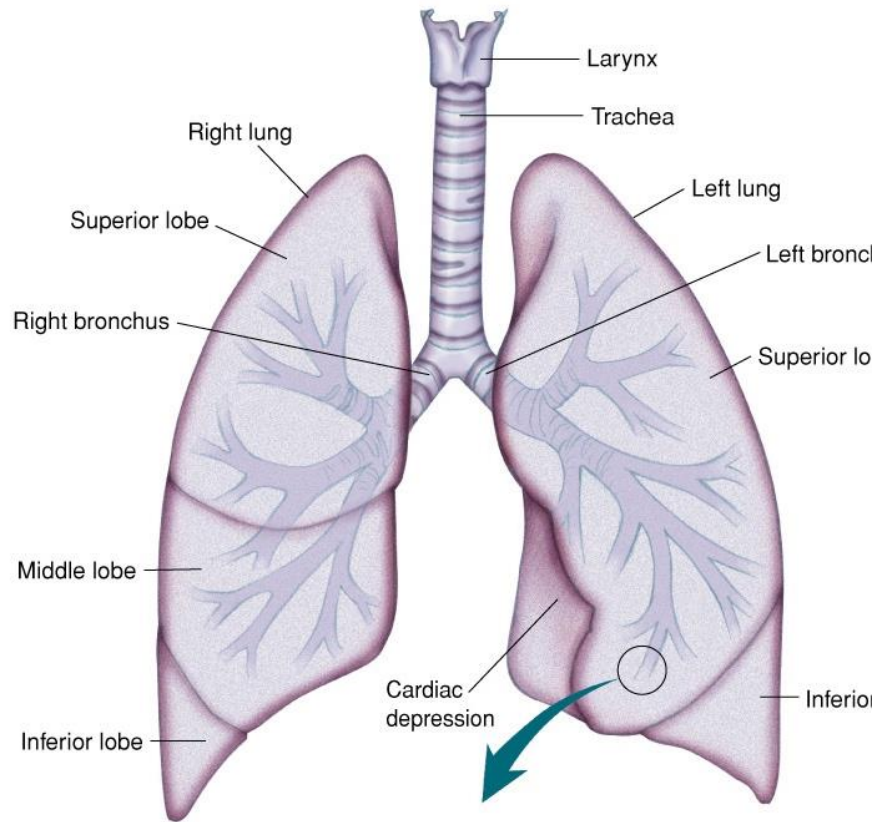
Lungs & Surrounding Structures



Respiratory anatomy:

- Image courtesy of www.myvmc.com





The Lungs

Auscultation- you can always call these 'added sounds' or think of these

- **Stridor**

- High pitched, “crowing”
- Upper airway restriction

- **Wheezing**

- “Whistling”
- Usually more pronounced on exhalation
- Generalized: narrowing, spasm of the smaller airways
- Localized: foreign body aspiration

Crackles (Rales)

Fine, “crackling”

Fluid in smaller airways, alveoli

Rhonchi

Coarse, “rumbling”

Fluid, mucus in larger airways

Common near patient tests

-

Pulse oximetry

- Why is this important. What factors can affect readings.
- Is it relevant in patient with smoke inhalation. Why?

Peak Flow Meter

- Why?
- When should it be done?
- How?
- Are paedrs and adults the same?

Spirometry-the Gold standard

- What is the relevance of spirometry?
 - How does it help in asthma and COPD?
- What is the relevance of FEV1,FVC,VC?



Four main stages for all examinations:

1. Inspection
 2. Palpation
 3. Percussion
 4. Auscultation
- Don't always need to progress in a linear way

Hands and nails:

- Nicotine stains
- Clubbing
- Peripheral cyanosis
- Muscle wasting
- Flapping tremor
- CRT
- Pulse rate, volume, rhythm, character



Face and neck:

- Pallor
- Central cyanosis
- Horner's syndrome
- Pursed lip breathing
- JVP
- Lymph nodes – palpate
- Trachea - palpate

Chest wall:

- Shape of the chest
- Scars
- Deformities
- Kyphosis and scoliosis
- Radiotherapy tattoos
- Prominent veins
- Movement of chest wall
- Accessory muscles and intercostal withdrawing





Palpate the lymph nodes and trachea at some stage in your examination



Move on to the chest wall



Can start at front or back of chest but more likely to find signs at the back



Chest expansion



Tactile vocal fremitus

Chest
expansion:



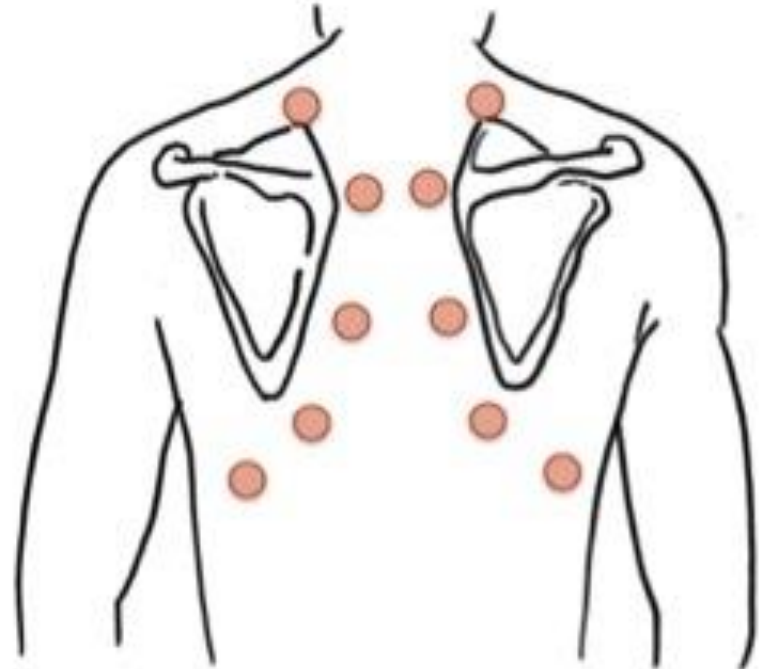
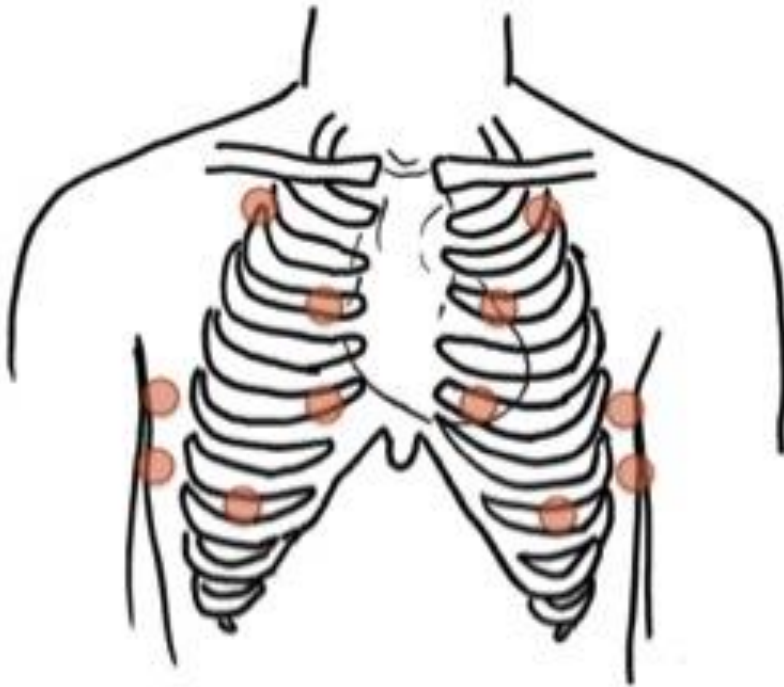


Percussion:

- Resonant = normal!
- Hyperresonant vs resonant
- Resonant vs dull
- Dull vs stony dull
- Fluid
- Consolidation
- Collapse
- Pneumothorax

<https://www.youtube.com/watch?v=nokZ5sNt3fA&list=PLLKSV1ibO86qgE2y9cMqNFmh6LfOa8RM&index=8>

Stethoscope placement for lung auscultation



Importance of History Taking

- Essential for accurate diagnosis and management
- Helps differentiate between respiratory and non-respiratory causes of symptoms
- Identifies red flags that require urgent referral
- Guides further investigations and treatment plans

Communication Skills

- Demonstrating empathy in response to patient cues: both verbal and non-verbal.
- Active listening: through body language and your verbal responses to what the patient has said.
- An appropriate level of eye contact throughout the consultation.
- Open, relaxed, yet professional body language (e.g. uncrossed legs and arms, leaning slightly forward in the chair).
- Making sure not to interrupt the patient throughout the consultation.
- Establishing rapport (e.g. asking the patient how they are and offering them a seat).
- Signposting: this involves explaining to the patient what you have discussed so far and what you plan to discuss next.
- Summarising at regular intervals.

Key Components of Respiratory History

- Presenting complaint (PC)
- History of presenting complaint (HPC)
- Past medical history (PMH)
- Drug history (DH) and allergies
- Family history (FH)
- Social history (SH) including smoking, occupation, and travel
- Review of systems (ROS)

Presenting Complaint (PC)

- - Ask about the main symptom(s):
 - - Cough
 - - Shortness of breath (Dyspnoea)
 - - Wheezing
 - - Chest pain
 - - Haemoptysis (coughing up blood)
- - Explore onset, duration, and progression

Key Symptoms in Respiratory

- **Dyspnoea:** shortness of breath associated with a wide range of respiratory pathology including pneumonia, asthma and chronic obstructive pulmonary disease (COPD).
- **Cough:** can be productive (e.g. pneumonia, COPD, bronchiectasis) or dry (e.g. pulmonary fibrosis, side effect of ACE inhibitors).
- **Haemoptysis:** the coughing up of blood originating from the respiratory tract below the level of the larynx. Haemoptysis is typically associated with lung cancer but can be a rare clinical feature of pulmonary embolism.
- **Wheeze:** a continuous, coarse, whistling sound produced in the respiratory airways during breathing. It is commonly associated with conditions such as asthma, COPD and anaphylaxis.
- **Chest pain:** typically worsened by deep inspiration due to being pleuritic in nature (e.g. pulmonary embolism, pleurisy).
- **Systemic symptoms:** these can include fatigue (e.g. lung cancer, COPD), fever (e.g. pneumonia), and weight loss (e.g. end-stage COPD, lung cancer).

History of Presenting Complaint (HPC)

- Cough: Duration (acute vs. chronic), dry vs. productive, nocturnal worsening
- Dyspnoea: Onset (sudden vs. gradual), positional changes, exertional symptoms
- Wheezing: Triggers (exercise, allergens), response to inhalers
- Chest pain: Pleuritic, sharp, radiation, associated symptoms (fever, sweating)
- Haemoptysis: Frequency, volume, associated weight loss or fever

SOCRATES acronym is a useful tool for exploring each of the patient's presenting symptoms in more detail. It is most commonly used to explore pain, but it can be applied to most other symptoms, although some of the elements of SOCRATES may not be relevant to all symptoms.

Site

- Ask about the **location** of the symptom:
- *"Where is the pain?"*
- *"Can you point to where you experience the pain?"*

Onset

- Clarify **how** and **when** the symptom developed:
- *"Did the shortness of breath come on suddenly or gradually?"*
- *"When did the shortness of breath first start?"*
- *"How long have you been experiencing the shortness of breath?"*

Character

- Ask about the **specific characteristics** of the symptom:
- *"How would you describe the shortness of breath?"* (e.g. "tight chest", "can't take a deep breath")
- *"Is the shortness of breath constant or does it come and go?"*

HPC: SOCRATES

Radiation

- Ask if the symptom moves anywhere else:
- "Does the chest pain spread elsewhere?"

Associated symptoms

- Ask if there are other symptoms which are associated with the primary symptom:
- "Are there any other symptoms that seem associated with the pain?" (e.g. fever in pneumonia, shortness of breath and haemoptysis in pulmonary embolism)

Time course

- Clarify how the symptom has changed over time:
- "How has the shortness of breath changed over time?"
- Ask if there is diurnal variation of symptoms:
- "Are your symptoms worse at a particular time of day?"

Exacerbating or relieving factors

- Ask if anything makes the symptom worse or better:
- "Does anything make the shortness of breath worse?" (e.g. exertion, exposure to an allergen, cold air)
- "Does anything make the pain better?" (e.g. rest, inhaler)

Severity

- Assess the severity of the symptom by asking the patient to grade it on a scale of 0-10:
- "On a scale of 0-10, how severe is the chest pain, if 0 is no pain and 10 is the worst pain you've ever experienced?"
- If the symptom is shortness of breath, the severity can be bluntly assessed by assessing if the patient is able to speak in full sentences without having to take a breath. You can also ask how far a patient is able to walk (either on the flat or at an incline) without having to stop to take a breath to get an idea of their current performance status.

History of Presenting Complaint (HPC)

- Onset & duration: Acute (sudden) or chronic (weeks to months)?
- Triggers: Exposure to dust, chemicals, burn pits, explosives, or extreme weather?
- Exercise-related symptoms: Occur during military training or post-exertion?
- Improvement/Worsening: Do symptoms improve when on leave or worsen in specific environments?
- Associated symptoms: Fevers, weight loss, fatigue, night sweats (suggesting infections like TB)?

History

- Explosion exposure? (Blast lung injury, barotrauma)
- Concussive injuries? (Trauma to the chest or lungs)
- Fractured ribs or penetrating injuries? (Impaired breathing mechanics)
- History of intense physical training? (Risk of exercise-induced bronchoconstriction)
- Changes in breathing during training? (Symptoms during high exertion, cold exposure)
- Use of protective gear? (Gas masks, body armour – impact on breathing mechanics)

Past Medical History (PMH)

Ask if the patient has any medical conditions:

- *“Do you have any medical conditions?”*
- *“Are you currently seeing a doctor or specialist regularly?”*
- *JAM THREADS CA*

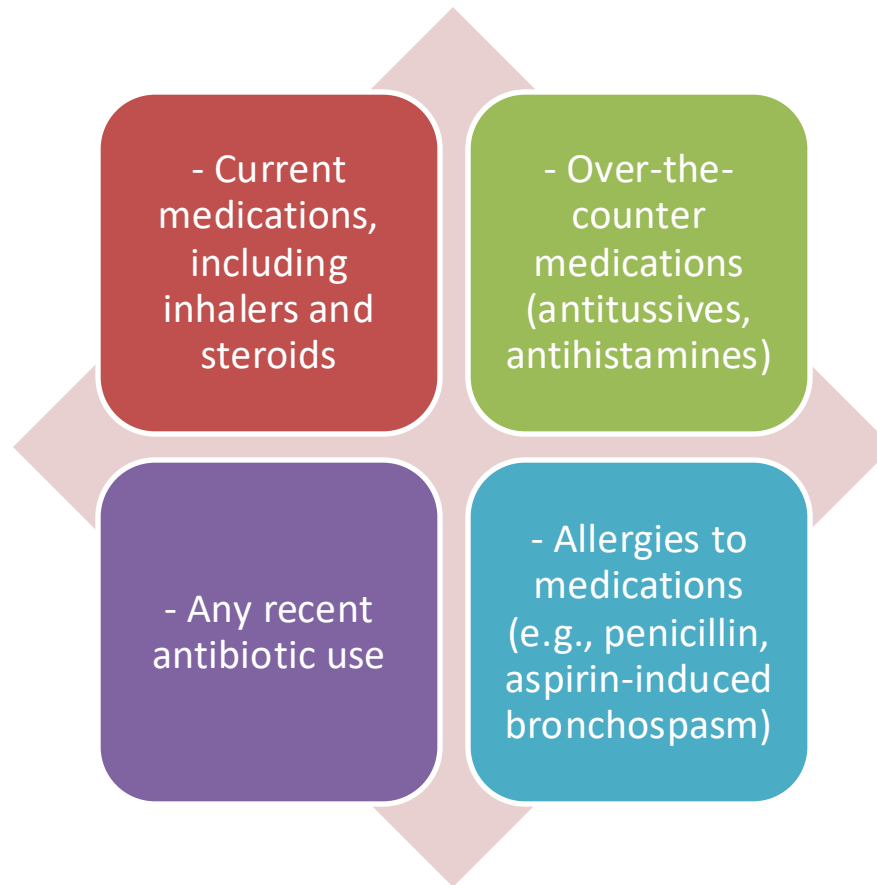
Ask if the patient has previously undergone any surgery or procedures (e.g. lobectomy, bronchoscopy):

- *“Have you ever previously undergone any operations or procedures?”*
- *“When was the operation/procedure and why was it performed?”*

Relevant medical conditions

- Asthma
- COPD
- Lung cancer
- Bronchiectasis
- Pulmonary fibrosis
- Pulmonary embolism
- Tuberculosis
- Neuromuscular conditions (e.g. motor neurone disease)
- Congestive heart failure
- Cor pulmonale
- Cystic fibrosis
- Alpha-1 antitrypsin deficiency

Drug History & Allergies



Medication History

- Ask if the patient is currently taking any prescribed medications or over-the-counter remedies:
- *"Are you currently taking any prescribed medications or over-the-counter treatments?"*
- If the patient is taking prescribed or over the counter medications, document the medication name, dose, frequency, form and route.
- If the patient is using inhalers, check the device type, whether they use a spacer and if they have any problems using the inhaler. If there is time in the consultation, you could ask them to demonstrate their inhaler technique.
- Ask the patient if they're currently experiencing any side effects from their medication (e.g. dry cough with ACE inhibitor):
- *"Have you noticed any side effects from the medication you currently take?"*

- Many inhalers contain a combination of medications (e.g. LABA/ICS or LABA/LAMA), and patients are typically more familiar with the brand name. It is helpful to familiarise yourself with commonly prescribed combination inhalers in your area.
- Some over the counter drugs which may impact the respiratory system include:
 - Aspirin (may worsen haemoptysis if already present)
 - St John's Wort (an enzyme inducer which may reduce the effects of warfarin)

Medication with Respiratory Side Effects

- Beta-blockers and NSAIDs (bronchoconstriction)
- ACE inhibitors (dry cough)
- Oestrogen-containing medication (increased risk of pulmonary embolism)
- Amiodarone and methotrexate (pleural effusions, interstitial lung disease)
- Nitrofurantoin (pulmonary reactions, pulmonary fibrosis)

Family History (FH)

“Do any of your parents or siblings have any lung problems?”

Family history of respiratory conditions:

- Asthma
- Cystic fibrosis
- Lung cancer
- Tuberculosis
- Any history of autoimmune diseases that may affect the lungs

Social History (SH)

- Smoking history (Pack years = No. of packs/day × Years smoked)
- Occupational exposure (dust, fumes, asbestos)
- Environmental exposures (pollution, pets, mold)
- Travel history (recent infections, TB risk)
- Recreational drug use (e.g., cannabis, cocaine)

Exercise

- Exercise-Induced Bronchoconstriction (EIB) in Military Training
- Intense cardio in cold air, dry environments, or polluted areas can trigger bronchospasms.
- Proper warm-ups, breathing exercises, and bronchodilator use help manage symptoms.
- Lung Overexertion and Respiratory Strain
- Soldiers involved in intense cardio or endurance training may experience respiratory fatigue.
- Proper hydration, breathing techniques, and pacing strategies can prevent excessive strain.
- High-Altitude Pulmonary Oedema in Military Operations
- Soldiers deployed in high-altitude combat zones (e.g., mountainous regions) are at risk of altitude sickness
- Acclimatisation, gradual ascent, and proper breathing training help in adaptation.

Preventing Respiratory Deconditioning

Extended deployments, injuries, or prolonged inactivity can reduce lung efficiency, making physical reconditioning essential.

Aerobic training (running, cycling, swimming) improves lung function and prevents deconditioning-related breathlessness.

Respiratory Conditions in Military Personnel

- Deployment-Related Lung Diseases
- Burn Pit Exposure-Related Illness
 - Exposure to burn pits (used for waste disposal in war zones) releases toxic smoke and chemicals, leading to chronic lung damage.
 - Linked to bronchitis, asthma, and constrictive bronchiolitis.
- Iraq-Afghanistan War Lung Injury (IAW-LI)
 - Unique lung condition seen in soldiers exposed to desert dust, burn pits, and combat smoke.
 - Symptoms: Chronic cough, shortness of breath, and reduced exercise tolerance.
- Desert Lung Syndrome
 - Caused by inhalation of fine desert sand and particulate matter, leading to chronic airway inflammation.
 - Common among deployed personnel in Middle Eastern regions.

Chronic Airway Diseases

- Asthma and Reactive Airway Disease Syndrome (RADS)
 - Aggravated by military exposure to dust, chemicals, and burn pits.
 - Higher prevalence in deployed personnel compared to non-deployed military members.
- Chronic Obstructive Pulmonary Disease (COPD)
 - Accelerated in veterans due to prolonged exposure to combat smoke, pollution, and toxic chemicals.
 - Often seen in military smokers or those exposed to prolonged air pollution.
- Bronchiolitis Obliterans (Constrictive Bronchiolitis)
 - Severe irreversible lung disease linked to inhalation of toxic fumes from explosives and burn pits.
 - Symptoms: Progressive shortness of breath, exercise intolerance, and chronic cough

Respiratory Infections in the Military

- Tuberculosis (TB)
 - Military personnel deployed in high-risk regions (Asia, Africa, Eastern Europe) have a higher risk of TB exposure.
 - Close-quarters living increases transmission risk.
- Pneumonia & Acute Bronchitis
 - Frequent in soldiers undergoing intense physical training in extreme climates.
 - Bacterial and viral pneumonias are common among deployed troops living in crowded environments.
- Legionnaires' Disease
 - Outbreaks have occurred in military barracks and naval ships due to contaminated water systems.
 - Symptoms: High fever, cough, pneumonia-like illness.
- COVID-19 & Influenza
 - Rapid spread in military bases and training camps due to close contact.
 - Compromises operational readiness and requires strict infection control.

Military-Specific Occupational Lung Diseases

Blast Lung Injury

- Caused by high-energy explosions leading to acute lung damage, pulmonary haemorrhage, and respiratory failure.
- Seen in combat soldiers exposed to IED (improvised explosive device) blasts.

Asbestosis & Mesothelioma

- Military veterans (especially Navy personnel) were historically exposed to asbestos in ships, vehicles, and military buildings.
- Can develop decades after service, leading to chronic lung disease and cancer.

Chemical Warfare Agent Exposure (Mustard Gas, Sarin Gas)

- Long-term lung damage can occur in soldiers exposed to chemical weapons.
- Leads to chronic bronchitis, pulmonary fibrosis, and lung scarring.

Occupation

- Explore the patient's current and previous occupations to identify potential exposure to agents that can lead to respiratory disease.
- Coal mining is associated with the development of pneumoconiosis.
- Farmers are at increased risk of developing allergic extrinsic alveolitis.
- Shipyard, construction, and plumbing workers may have been exposed to asbestos, increasing their risk of mesothelioma.
- Household members are also at risk due to exposure through washing or contact with contaminated clothing.
- Ask the patient if their symptoms change when they are away from work to help establish a link to potential occupational exposures.

Workplace Exposure and Respiratory Risks and Conditions

- Office & Home-Based Workers – Indoor air pollution, mold, allergens
- Healthcare Workers – Infectious diseases, disinfectant exposure
- Teachers & Childcare Workers – Poor ventilation, frequent infections
- Construction & Industrial Workers – Asbestos, silica dust, metal fumes
- Farmers & Agricultural Workers – Mold, pesticides, zoonotic infections
- Transport & Delivery Workers – Diesel exhaust, pollution exposure
- Pneumoconiosis (Coal miners)
- Farmer's Lung (Hypersensitivity Pneumonitis) (Agricultural workers)
- Asbestosis & Mesothelioma (Construction, shipyard workers)
- Occupational Asthma (Healthcare, factory workers)
- COPD & Chronic Bronchitis (Drivers, industrial workers)

When taking a respiratory history, always ask:

- Do symptoms change when away from work? (Improvement suggests an occupational link)
- Does the workplace have adequate ventilation and protective measures?
- Have there been past workplace exposures to chemicals, dust, or fumes?

Smoking

- Record the patient's smoking history, including the type and amount of tobacco used.
- Calculate the number of 'pack-years' the patient has smoked for to determine their cardiorespiratory risk profile:
- $\text{pack-years} = [\text{number of years smoked}] \times [\text{average number of packs smoked per day}]$
- one pack is equal to 20 cigarettes
- Ask the patient if they vape or use e-cigarettes, even if they are an ex- or non-smoker.

Review of Systems (ROS)



- Fever, weight loss, fatigue



- ENT: Sore throat, nasal congestion, postnasal drip



- Cardiovascular: Orthopnea, palpitations



- Gastrointestinal: Reflux symptoms (GERD-related cough)



- Neurological: Voice changes, respiratory muscle weakness

Red Flags in Respiratory History



- Haemoptysis
(especially in
smokers)



- Sudden onset severe
dyspnoea



- Unintentional
weight loss



- Night sweats with
persistent cough



- Chest pain with
pleuritic nature or
severe breathlessness

Summary & Key Takeaways

- A detailed history is crucial in diagnosing respiratory conditions
- Use a systematic approach: PC, HPC, PMH, DH, FH, SH, ROS
- Identify red flags that require urgent intervention
- SOCRATES can help structure symptom assessment
- Always consider occupational and environmental factors

Questions & Discussion



Any questions?



Discuss case examples and
share experiences.