

What are the categories of lung disease?

Obstructive	Disease caused by obstruction of airways	Asthma, Chronic Obstructive Pulmonary disease
Restrictive	Disease caused by restricted lung expansion	Interstitial lung disease, Asbestosis, Pulmonary fibrosis, Sarcoidosis
Infectious	Due to infection of the lung	Pneumonia
Inflammatory	Disease related to inflammatory response in the lung	Cystic fibrosis, Acute respiratory distress syndrome
Vascular	Pathology related to pulmonary vasculature	Pulmonary embolism, Pulmonary oedema, Haemorrhage(eg. Goodpasture's syndrome)
Pleural cavity disease	Pathology affects pleural space	Pneumothorax, Pleural plaques/mesothelioma

What are the causes of tachypnoea and bradypnoea?

Tachypnoea	Bradypnoea
Airway obstruction (Asthma, COPD)	Exhaustion in severe airway obstruction
Pneumonia	Sedation
Pulmonary Fibrosis	Raised intracranial pressure
Pulmonary embolism	Opiate overdose
Pneumothorax	Intoxication
Pleural Effusion	
Cardiac Failure	

What are possible nail findings in lung disease?

Nail abnormality	Definition	Associated condition
Koilonychia	Transverse and longitudinal concavity – giving a spoon shaped nail	Iron deficiency anaemia
Onycholysis	Separation of nail plate from nail bed, leaving a white discolouration.	Sarcoidosis, ankylosing spondylitis
Yellow Nail	Slow growing nail, with heaped up' appearance. The lunula disappears and the nail shows a yellow hue.	Pleural effusion, bronchiectasis

What are the causes of tracheal deviation?

Displacement towards the lesion	Displacement away from the lesion	Other displacement
Lobar collapse	Large pleural effusion	Mediastinal masses
Pneumonectomy	Tension pneumothorax	
Pulmonary fibrosis		

What are the types of percussion notes?

Percussion Note	Common Causes	
Dull *	Pleural effusion, presence of hepatic tissue, consolidation, pleural thickening	Solid organ or fluid
Resonant	Normal lung	Aerated lung tissue
Hyperresonant	Pneumothorax, COPD	Hyperinflated lung tissue or air in the pleural space

* Some authors refer to stony-dull as a separate percussion note. We have not included this here.

What is the significance of different sputum types?

Type	Characteristics	Associated pathology
Purulent	Thick, yellow/green sputum	Infectious – pneumonia, bronchiectasis and abscess
Mucoid	Clear, grey/white	Chronic obstructive pulmonary disease and asthma
Serous	Clear, frothy, can be pink	Pulmonary oedema
Blood	Blood	Malignancy, pulmonary embolus, clotting disorders, infection

What is the significance of different cough types?

Characteristics of cough	Potential significance
Productive	Chronic bronchitis, lower respiratory tract infection, bronchiectasis or cancer.
Dry	Infection (upper or lower respiratory tract), asthma (see Evidence Box 2) (particularly nocturnal), gastro-oesophageal reflux disease, post-nasal drip, pulmonary fibrosis, drugs (e.g. ACE-inhibitors) or cancer.
Bovine	Vocal cord paralysis, potentially secondary to invasion of recurrent laryngeal nerve by lung cancer.
Wheezy	Airflow limitation, e.g. asthma

What are the types of abnormal breath sounds?

Quality

Normal breath sounds
(vesicular sounds)

Inspiratory phase longer than expiratory phase, without interposed gap. Due to transmitted air turbulence.

Bronchial breathing

Harsher noises; prolonged during expiration. Heard over areas of consolidation, where sound is not filtered by alveoli.

Amphoric breath
sounds (less common)

Hollow noises, heard over a large cavity. The sound is said to be like the noise of air passing over the top of a hollow jar.

Intensity

Reduced intensity
(decreased air entry)

Muffled breath sounds as a result of pleural effusion, pneumonia, chronic obstructive pulmonary disease collapse, pneumothorax or a mass.

Added sounds

Wheeze (polyphonic)

Continuous sounds with a musical quality. Note when in the respiratory cycle the wheeze occurs; usually louder in expiration. Due to airway narrowing in asthma or chronic obstructive respiratory disease.

Wheeze (monophonic)

Single note, due to fixed obstruction such as a space occupying lesion.

Stridor

Unlike wheeze, stridor is inspiratory; due to upper airway obstruction

Crackles

Interrupted, non-musical sounds, often occurring due to opening of small airways. Early inspiratory crackles suggest chronic obstructive respiratory disease; whilst later or pan-inspiratory crackles suggest that the disease is limited to the alveoli. Fine crackles sound like Velcro being pulled apart, they are characteristic of pulmonary fibrosis; medium crackles are typical of left ventricular failure whilst coarse crackles indicate pools of retained secretions in conditions such as bronchiectasis.

Pleural rub

A continuous grating sound which occurs with pleurisy as the inflamed pleura rub against each other (e.g. secondary to a pulmonary infarct or pneumonia)
