



7.2 Causes of cough

	Normal chest X-ray	Abnormal chest X-ray
Acute cough (<3 weeks)	Viral respiratory tract infection Bacterial infection (acute bronchitis) Inhaled foreign body Inhalation of irritant dusts/fumes	Pneumonia Inhaled foreign body Acute hypersensitivity pneumonitis
Chronic cough (>8 weeks)	Gastro-oesophageal reflux disease Asthma Postviral bronchial hyperreactivity Rhinitis/sinusitis Cigarette smoking Drugs, especially angiotensin-converting enzyme inhibitors Irritant dusts/fumes	Lung tumour Tuberculosis Interstitial lung disease Bronchiectasis



7.22 Causes of diminished vesicular breathing

Reduced conduction

- Obesity/thick chest wall
- Pleural effusion or thickening
- Pneumothorax

Reduced airflow

- Generalised, e.g. COPD
- Localised, e.g. collapsed lung due to occluding lung cancer



7.25 Causes of crackles

Phase of inspiration	Cause
Early	Small airways disease, as in bronchiolitis
Middle	Pulmonary oedema
Late	Pulmonary fibrosis (fine) Pulmonary oedema (medium) Bronchial secretions in COPD, pneumonia, lung abscess, tubercular lung cavities (coarse)
Biphasic	Bronchiectasis (coarse)



7.27 Causes of bronchial breath sounds

Common

- Lung consolidation
(pneumonia)

Uncommon

- Localised pulmonary fibrosis
- At the top of a pleural effusion
- Collapsed lung (where the underlying major bronchus is patent)



7.10 Symptoms of obstructive sleep apnoea/ hypopnoea syndrome (OSAHS)

- Snoring
- Witnessed apnoeas
- Unrefreshing sleep
- Restless sleep
- Nocturia
- Excessive daytime sleepiness
- Impaired concentration
- Choking episodes during sleep
- Irritability/personality change
- Decreased libido



7.21 Percussion note

Type	Detected over
Resonant	Normal lung
Hyperresonant	Pneumothorax
Dull	Pulmonary consolidation
	Pulmonary collapse
	Severe pulmonary fibrosis
Stony dull	Pleural effusion
	Haemothorax



7.20 Common causes of tracheal deviation

Towards the side of the lung lesion

- Upper lobe or lung collapse
- Upper lobe fibrosis
- Pneumonectomy

Away from the side of the lung lesion

- Tension pneumothorax
- Massive pleural effusion

Upper mediastinal mass

- Retrosternal goitre
- Lymphoma
- Lung cancer



7.9 Acute breathlessness: commonly associated symptoms

No chest pain

- Pulmonary embolism
- Pneumothorax
- Metabolic acidosis
- Hypovolaemia/shock
- Acute left ventricular failure/pulmonary oedema

Pleuritic chest pain

- Pneumonia
- Pneumothorax
- Pulmonary embolism
- Rib fracture

Central chest pain

- Myocardial infarction with left ventricular failure
- Massive pulmonary embolism/infarction

Wheeze and cough

- Asthma
- COPD



7.8 Causes of chest pain

Non-central

Pleural

- Infection: pneumonia, bronchiectasis, tuberculosis
- Malignancy: lung cancer, mesothelioma, metastatic
- Pneumothorax
- Pulmonary infarction
- Connective tissue disease: rheumatoid arthritis, SLE

Chest wall

- Malignancy: lung cancer, mesothelioma, bony metastases
- Persistent cough/breathlessness
- Muscle sprains/tears
- Bornholm's disease (Coxsackie B infection)
- Tietze's syndrome (costochondritis)
- Rib fracture
- Intercostal nerve compression
- Thoracic shingles (herpes zoster)

Central

Tracheal

- Infection
- Irritant dusts

Cardiac

- Massive pulmonary thromboembolism
- Acute myocardial infarction/ischaemia

Oesophageal

- Oesophagitis
- Rupture

Great vessels

- Aortic dissection

Mediastinal

- Lung cancer
- Thymoma
- Lymphadenopathy
- Metastases
- Mediastinitis



7.6 Breathlessness: modes of onset, duration and progression

Minutes

- Pulmonary thromboembolism
- Pneumothorax
- Asthma
- Inhaled foreign body
- Acute left ventricular failure

Hours to days

- Pneumonia
- Asthma
- Exacerbation of COPD

Weeks to months

- Anaemia
- Pleural effusion
- Respiratory neuromuscular disorders

Months to years

- COPD
- Pulmonary fibrosis
- Pulmonary tuberculosis



7.5 Causes of breathlessness

Non-cardiorespiratory

- Anaemia
- Metabolic acidosis
- Obesity
- Psychogenic
- Neurogenic

Cardiac

- Left ventricular failure
- Mitral valve disease
- Cardiomyopathy
- Constrictive pericarditis
- Pericardial effusion

Respiratory

Airways

- Laryngeal tumour
- Foreign body
- Asthma
- COPD
- Bronchiectasis
- Lung cancer
- Bronchiolitis
- Cystic fibrosis

Parenchyma

- Pulmonary fibrosis
- Alveolitis
- Sarcoidosis
- Tuberculosis
- Pneumonia
- Diffuse infections, e.g.
Pneumocystis jiroveci
pneumonia
- Tumour (metastatic,
lymphangitis)

Pulmonary circulation

- Pulmonary thromboembolism
- Pulmonary vasculitis
- Primary pulmonary hypertension

Pleural

- Pneumothorax
- Effusion
- Diffuse pleural fibrosis

Chest wall

- Kyphoscoliosis
- Ankylosing spondylitis

Neuromuscular

- Myasthenia gravis
- Neuropathies
- Muscular dystrophies
- Guillain–Barré syndrome



7.4 Causes of haemoptysis

Tumour

Malignant

- Lung cancer
- Endobronchial metastases

Benign

- Bronchial carcinoid

Infection

- Bronchiectasis
- Tuberculosis
- Lung abscess

- Mycetoma
- Cystic fibrosis

Vascular

- Pulmonary infarction
- Vasculitis
- Polyangiitis
- Trauma
- Inhaled foreign body
- Chest trauma
- Cardiac
- Mitral valve disease
- Haematological
- Blood dyscrasias

- Arteriovenous malformation
- Goodpasture's syndrome
- Iatrogenic
- Bronchoscopic biopsy
- Transthoracic lung biopsy
- Bronchoscopic diathermy
- Acute left ventricular failure
- Anticoagulation



7.3 Types of sputum

Type	Appearance	Cause
Serous	Clear, watery	Acute pulmonary oedema
	Frothy, pink	Alveolar cell cancer
Mucoid	Clear, grey	Chronic bronchitis/chronic obstructive pulmonary disease
	White, viscid	Asthma
Purulent	Yellow	Acute bronchopulmonary infection
	Green	Asthma (eosinophils) Longer-standing infection Pneumonia Bronchiectasis Cystic fibrosis Lung abscess
Rusty	Rusty red	Pneumococcal pneumonia



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- Exacerbation of Asthma
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Hours to days

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- Asthma
- Exacerbation of COPD

Weeks to months

- Anemia
- Pleural effusion
- Respiratory neuromuscular disorders

Months to years

- COPD
- Pulmonary fibrosis
- Pulmonary tuberculosis



7.5 Causes of breathlessness

Non-cardiorespiratory	
• Anaemia	• Psychogenic
Cardiac	
• Left ventricular failure	• Constrictive pericarditis
• Mitral valve disease	• Pericardial effusion
Respiratory	
Airways	
• Laryngeal tumour	Pulmonary circulation
• Foreign body	• Pulmonary thromboembolism
• Asthma	• Pulmonary vasculitis
• COPD	• Primary pulmonary hypertension
• Bronchiectasis	
• Lung cancer	
• Bronchiolitis	Pleural
• Cystic fibrosis	• Pneumothorax
Parenchyma	
• Pulmonary fibrosis	• Effusion
• Alveolitis	• Diffuse pleural fibrosis
• Sarcoidosis	
• Tuberculosis	Chest wall
• Pneumonia	• Kyphoscoliosis
• Diffuse infections, e.g. <i>Pneumocystis jirovecii</i> pneumonia	• Ankylosing spondylitis
• Tumour (metastatic, lymphangitis)	Neuromuscular
	• Myasthenia gravis
	• Neuropathies
	• Muscular dystrophies
	• Guillain–Barré syndrome



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