Assessment Of The Respiratory System

History Of Present Illness And Review Of System

General
The following characteristics of each symptom should be elicited and explored:
- Onset (sudden or gradual)
- Chronology
- Current situation (improving or deteriorating)
- Timing (frequency, duration)
- Severity
- Precipitating and aggravating factors
- Relieving factors
- Associated symptoms
- Effects on daily activities
- Previous diagnosis of similar episodes
- Previous treatments
- Efficacy of previous treatments

Cardinal Symptoms
In addition to the general characteristics outlined above, additional characteristics of specific symptoms should be elicited, as follows.

Cough
- Quality (e.g. dry, hacking, loose, productive)
- Severity
- Timing (e.g. at night, with exercise)

Sputum
- Color
- Amount
- Consistency

Hemoptysis
- Amount of blood (frank vs. streaking)
- Association with leg pain, chest pain, shortness of breath, epistaxis

Shortness of Breath
- Exercise tolerance (number of stairs client can climb or distance client can walk)
- Orthopnea (number of pillows used for sleeping)
- Association with paroxysmal nocturnal dyspnea (waking up out of sleep acutely short of breath; attack resolves within 20 to 30 minutes of sitting or standing up)

Chest Pain
- Onset (sudden or gradual)
- Location
- Radiation
- Quality
- Timing
- Severity
- Aggravating and relieving factors
- Associated symptoms

Wheeze
- Timing (e.g. at rest, at night, with exercise)

Other Associated Symptoms
- Fever
- Malaise
- Fatigue
- Night sweats
- Weight loss

Medical History (Specific To Respiratory System)
- Frequency of colds or asthma and treatment used
- Other respiratory illnesses (e.g. nasal polyps, chronic sinusitis)
- Bronchitis, pneumonia, chronic obstructive pulmonary disease (COPD), tuberculosis (TB) (disease or exposure), cancer, cystic fibrosis
- Seasonal allergies or allergies to drugs such as acetylsalicylic acid (ASA)
- Medications such as angiotensin-converting enzyme (ACE) inhibitors, β-blockers, ASA, steroids, nasal sprays, antihistamines,
- Alternative therapies (e.g. herbal, traditional medicine)
- Admissions to hospital for respiratory illness
- Date and result of last Mantoux test and chest x-ray
- Vaccination history (e.g. pneumococcal, annual influenza)
Family History (Specific To Respiratory System)
• Allergies, atopy
• Asthma, lung cancer, TB, cystic fibrosis
• Heart disease
• COPD

Personal And Social History (Specific To Respiratory System)
• Smoking history (number of packages/day, number of years)
• Alcohol abuse
• HIV risks
• Exposure to secondhand smoke
• Occupational or environmental exposure to respiratory irritants
• Exposure to pets
• Crowded living conditions
• Personal or environmental cleanliness
• Institutional living
• Injection drug use
Examination Of The Respiratory System

Examination of the ear, nose, throat and cardiovascular system should also be carried out because of the interrelatedness between these systems and structures and the functioning of the lower respiratory tract (see chapter 2, "Ears, Nose and Throat," and chapter 4, "Cardiovascular System," for details of these examinations).

General Appearance
• Acutely or chronically ill
• Degree of comfort or distress
• Degree of sweatiness
• Ability to speak a normal-length sentence without stopping to take a breath
• Color (e.g. flushed, pale, cyanotic)
• Nutritional status (obese or emaciated)
• Hydration status

Vital Signs
• Temperature
• Pulse
• Pulse oximetry
• Respiratory rate
• Blood pressure

Inspection
• Color (e.g. central cyanosis)
• Shape of chest (e.g. barrel-shaped, spinal deformities)
• Movement of chest (symmetry)
• Rate, rhythm and depth of respiration
• Use of accessory muscles (sternocleidomastoid muscles)
• Intercostal indrawing
• Evidence of trauma
• Chest wall scars
• Clubbing of the fingers

Palpation
• Tracheal position (midline)
• Chest wall tenderness
• Chest expansion
• Tactile fremitus
• Spinal abnormality
• Nodes (axillary, supraclavicular, cervical)
• Masses
• Subcutaneous emphysema

Percussion
• Resonance (dull or hyperresonance)
• Location and excursion of the diaphragm

Auscultation
• Assist client to breathe effectively
• Listen for sounds of normal air entry before trying to identify abnormal sounds

Breath Sounds
• Degree of air entry throughout the chest (should be equal)
• Quality of breath sounds (e.g. bronchial, bronchovesicular, vesicular)
• Length of inspiration and expiration

Adventitious Sounds
• Wheezes: continuous sounds, ranging from a low-pitched snoring quality to a high-pitched musical quality, may clear with coughing
• Crackles: discrete, crackling sounds heard on inspiration
• Pleural rub: a creaking sound from pleural irritation, heard on inspiration or expiration
Differential Diagnosis Of Respiratory Symptoms

Acute Cough
- Infection: viral or bacterial, upper or lower respiratory tract
- Lung abscess
- Asthma
- Exacerbations of chronic bronchitis
- Bronchogenic carcinoma
- Foreign-body inhalation
- Esophageal reflux with aspiration
- Left-sided heart failure

Chronic Cough

**Common Causes**
- Smoking
- Exposure to environmental irritants (second hand smoke)
- Postnasal drip
- Asthma
- COPD or chronic bronchitis
- Gastroesophageal reflux with aspiration
- Lung tumors
- Mitral valve prolapse

**Less Common Causes**
- Carcinoma of the upper or lower respiratory tract
- Interstitial lung disease
- Medications (e.g. ACE inhibitors)
- Chronic lung infections (e.g. bronchiectasis, cystic fibrosis, TB)
- Occult left heart failure
- Disorders of the pleura, pericardium, diaphragm, stomach
- Idiopathic (e.g. psychogenic)
- Pressure from an external mass (e.g. goitre, aortic aneurysm)

Cough And Sputum Production
- Acute bronchitis
- Pneumonia
- Asthma
- TB
- COPD
- Bronchiectasis
- Lung abscess
- Lung cancer

Dyspnea
- Asthma
- COPD
- Pneumothorax
- Pneumonia
- Interstitial lung disease (e.g. sarcoidosis)
- Lung cancer
- Pulmonary emboli or infarction
- Cardiac failure, congestive heart failure
- Anxiety with hyperventilation

Hemoptysis
- Bronchitis
- Bronchiectasis
- TB
- Lung abscess
- Pneumonia, necrotizing form (e.g. caused by *Klebsiella*)
- Pulmonary contusion
- Pulmonary embolism
- Primary pulmonary hypertension
- Mitral stenosis
- Cardiac failure, congestive heart failure
- Vascular anomalies (e.g. aneurysm)
- Chest trauma
- Inhalation of toxic material
- Bleeding disorders

Wheeze
- Acute bronchitis
- COPD
- Asthma
- Bronchopneumonia (due to aspiration)
- Lung neoplasm obstructing a bronchus
- Pulmonary emboli
- Foreign-body aspiration

Chest Pain (Pleuritic)

Diseases of the Lungs or Pleura
- Pneumonia
- Pleurisy
- Pleuritis associated with connective tissue diseases
- Pneumothorax
Hemothorax  
Empyema  
Pulmonary infarction  
Lung cancer  
TB

**Diseases of the Pericardium**
- Pericarditis
- Trauma

**Diseases of the Chest Wall Muscle, Bone, Nerves, Skin**
- Chest wall contusion
- Fractures of ribs, sternum
- Inflammation of chest wall muscles (costochondritis)
- Herpes zoster neuropathies
- Bone tumor

**Gastrointestinal Diseases**
- Liver abscess
- Pancreatitis
- Subdiaphragmatic abscess

**Other Diseases**
- Psychoneurosis

**Chest Pain (Nonpleuritic)**

**Diseases of the Pulmonary Vessels**
- Pulmonary embolism
- Primary pulmonary hypertension
- Disease of the aorta
- Dissecting aortic aneurysm

**Diseases of the Myocardium**
- Myocardial infarction
- Angina

**Referred Pain from Gastrointestinal Structures**
- Reflux esophagitis, ulceration
- Esophageal motility disorders (e.g. achalasia)
- Esophageal perforation or rupture
- Esophageal spasm
- Esophageal neoplasm
- Esophageal diverticula
- Gastric or duodenal ulcer
- Cholelithiasis, cholecystitis
- Pancreatitis, pancreatic neoplasm