



Dyspnea

This alarm bell shouldn't ring in a difficult diagnosis

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Dyspnea is common and distressing. It occurs in individuals with a variety of disorders and often leads them to seek medical care. Dyspnea can refer to actual breathing difficulty or a subjective, unpleasant sensation of breathing awareness. As such, it can vary greatly in quality, severity and associated symptoms. While dyspnea usually indicates a disease in the respiratory and/or cardiac systems, there are many potential causes, so careful consideration is required for the differential diagnosis. Clinical assessment depends on a detailed history, focused physical examination and appropriate use of selective investigations and chest x-ray. A simple but thorough workup will lead to a specific diagnosis and effective therapy in the vast majority of patients.

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Common causes

Respiratory

- asthma
- chronic obstructive pulmonary disease (COPD)
- interstitial lung disease
- infection, e.g. pneumonia
- malignancy

Cardiac

- heart failure

Miscellaneous

- obesity
- anemia
- neuromuscular disease, e.g. myasthenia gravis

Clues in medical history

Asthma

- intermittent dyspnea, wheeze and/or cough
- environmental allergies
- eczema
- family history of asthma or atopy

COPD

- chronic, progressive dyspnea with intermittent exacerbations
- significant smoking history
- associated cough and/or clear phlegm

Interstitial lung disease

- chronic, progressive dyspnea
- associated dry cough
- occupational exposures, e.g. asbestos, animals, farming environment

Infection, e.g. pneumonia

- acute dyspnea
- fever
- cough and purulent phlegm
- pleuritic chest pain

Malignancy

- acute or chronic dyspnea
- known extrapulmonary malignancy
- significant smoking history
- new or changed cough and/or hemoptysis
- weight loss and/or anorexia
- bone pain

Heart failure

- acute or chronic dyspnea
- known heart disease
- cardiac risk factors
- retrosternal chest pain
- orthopnea and/or paroxysmal nocturnal dyspnea
- edema

Key physical findings

Asthma

- respiratory distress if acute
- wheeze
- prolonged expiratory phase
- eczema

COPD

- cyanosis
- respiratory distress
- use of accessory respiratory muscles
- hyperinflation or barrel-chest
- decreased breath sounds, wheeze or rhonchus

Interstitial lung disease

- cyanosis
- clubbing
- crackles

Infection

- febrile
- excessive sweating, i.e. diaphoretic
- crackles and/or bronchial breath sounds

Malignancy

- extrapulmonary cancer or lymphadenopathy
- cachexia
- clubbing
- tracheal deviation
- dullness on percussion, e.g. pleural effusion or collapse

Heart failure

- increased jugular venous pressure
- edema
- extra heart sounds (e.g. S3, S4) and/or murmurs
- crackles on lung auscultation

Targeted diagnostic testing

COPD

- spirometry
- possibly, full pulmonary function tests
- chest x-ray
- blood gas if cyanotic

Interstitial lung disease

- full pulmonary function tests
- chest x-ray
- possibly, high resolution computed tomography (CT) scan of the chest

Infection

- chest x-ray
- if acutely unwell: blood gas,

complete blood count, serum chemistry, renal function

- possibly, blood cultures

Asthma

- spirometry
- if acutely unwell, blood gas and chest x-ray

Malignancy

- chest x-ray
- possibly, chest CT
- sputum cytology

Heart failure

- chest x-ray
- electrocardiogram
- echocardiogram

Management

Once the diagnosis has been established, manage as required for that condition

Follow-up

Good response

- follow-up as required

Poor response

- Consider the following
- poor compliance with therapy
- other pulmonary disease, e.g. vascular — pulmonary emboli, pulmonary hypertension
- cardiac disease other than heart failure — dyspnea as angina equivalent — valvular heart disease, congenital heart disorders
- various conditions — unfit, obesity, anxiety or psychogenic dyspnea, anemia, neuromuscular disease
- referral to respirologist for further assessment