

APPROACH TO DYSPNOEA

THE SENSATION OF BREATHLESSNESS AND THE PATIENTS' REACTION TO THAT SENSATION. USUALLY RESULTS FROM THE IMBALANCE BETWEEN VENTILATORY DEMAND BEING GREATER THAN CAPACITY

DIAGNOSTIC APPROACH:

- Large differential considerations, broken down into acute and chronic, many of which are pulmonary causes
- Break down diagnoses into critical vs emergent and non-emergent, as this will delineate approach and best management. THIS INITIAL DIVISION IS BASED ON THE DEGREE OF BREATHING EFFORT ASSOCIATED WITH THE SYMPTOMS.
 - The most critical diagnoses must be considered first and appropriate intervention taken as necessary

Table 17-1 Differential Diagnoses for Acute Dyspnea

ORGAN SYSTEM	CRITICAL DIAGNOSES	EMERGENT DIAGNOSES	NONEMERGENT DIAGNOSES
Pulmonary	Airway obstruction Pulmonary embolus Noncardiogenic edema Anaphylaxis Ventilatory failure	Spontaneous pneumothorax Asthma Cor pulmonale Aspiration Pneumonia	Pleural effusion Neoplasm Pneumonia (CAP score <= 70) COPD
Cardiac	Pulmonary edema Myocardial infarction Cardiac tamponade	Pericarditis	Congenital heart disease Valvular heart disease Cardiomyopathy
Primarily Associated with Normal or Increased Respiratory Effort			
Abdominal		Mechanical interference Hypotension, sepsis from ruptured viscus, bowel obstruction, inflammatory/infectious process	Pregnancy Ascites Obesity
Psychogenic			Hyperventilation syndrome Somatization disorder Panic attack
Metabolic/endocrine	Toxic ingestion DKA	Renal failure Electrolyte abnormalities Metabolic acidosis	Fever Thyroid disease
Infectious	Epiglottitis	Pneumonia (CAP score <= 70)	Pneumonia (CAP score <= 70)
Traumatic	Tension pneumothorax Cardiac tamponade Flail chest	Simple pneumothorax, hemothorax Diaphragmatic rupture	Rib fractures
Hematologic	Carbon monoxide poisoning Acute chest syndrome	Anemia	
Primarily Associated with Decreased Respiratory Effort			
Neuromuscular	CVA, intracranial insult Organophosphate poisoning	Multiple sclerosis Guillain-Barré syndrome Tick paralysis	ALS Polymyositis Porphyria

ALS, amyotrophic lateral sclerosis; CAP, community-acquired pneumonia; COPD, chronic obstructive pulmonary disease; CVA, cerebrovascular accident; DKA, diabetic ketoacidosis.

- PIVOTAL FINDINGS:
 - HISTORY:
 - Duration:
 - Chronic or progressive more suggestive of respiratory or cardiac cause
 - Acute → asthma, inhalational injury, PE, intermittent cardiac dysfunction, allergens, foreign bodies
 - Onset:
 - Sudden → think PE, spontaneous pneumothorax, AMI
 - Positional changes:
 - Orthopnoea:
 - Can occur in CHF, COPD, neuromuscular disorders
 - PND → most common in left CHF, but can occur COPD
 - Traumatic chest injury → think haemopneumothorax, flail, tamponade

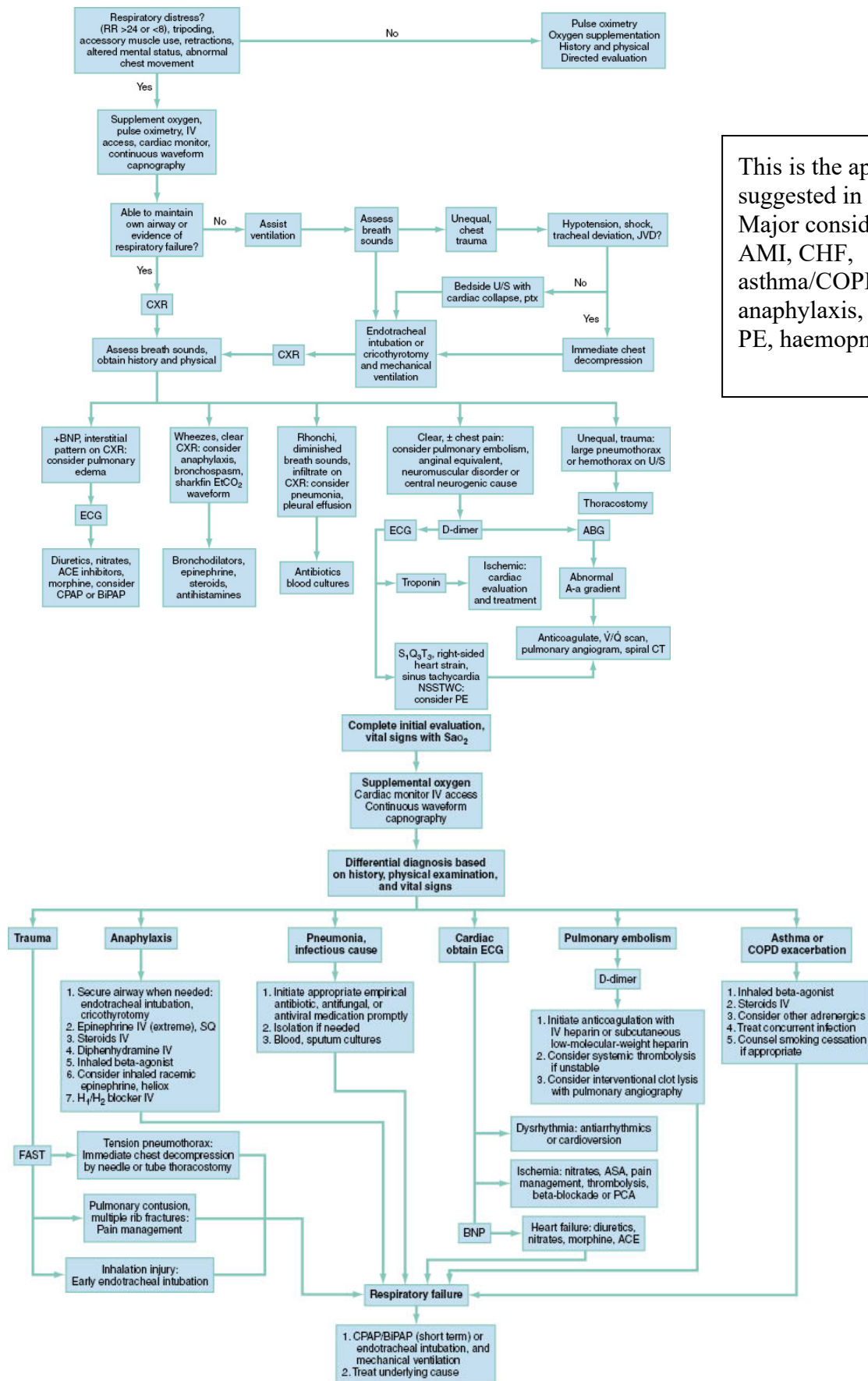
- Patient descriptions vary significantly and generally correlate poorly with severity

Table 17-3 Diagnostic Table: Patterns of Diseases Often Resulting in Dyspnea

DISEASE	HISTORY: (DYSPNEA)	ASSOCIATED SYMPTOMS	SIGNS AND PHYSICAL FINDINGS	TESTS
Pulmonary embolism	HPI: abrupt onset, pleuritic pain, immobility (travel, recent surgery) PMH: malignancy, DVT, PE, hypercoagulability, oral contraception, obesity	Diaphoresis, exertional dyspnea	Tachycardia, tachypnea, low-grade fever	ABG (A-a gradient), D-dimer ECG (dysrhythmia, right heart strain) CXR (Westermark sign, Hampton's hump) V/Q, spiral CT, MRV Pulmonary angiogram Ultrasound positive for DVT CXR, CBC, sputum and blood cultures
Pneumonia	Fever, productive cough, chest pain	Anorexia, chills, nausea, vomiting, exertional dyspnea, cough	Fever, tachycardia, tachypnea, rales or decreased breath sounds	ABG if hypoxia suspected Waveform capnography if altered mental status
Bacterial	SH: tobacco use			
Viral	Exposure (e.g., influenza, varicella)			
Opportunistic	Immune disorder, chemotherapy			
Fungal/parasitic	Exposure (e.g., birds), indolent onset	Episodic fever, nonproductive cough		
Pneumothorax	Abrupt onset ± trauma, chest pain, thin males more likely to have spontaneous pneumothorax	Localized chest pain	Decreased breath sounds, subcutaneous emphysema, chest wall wounds or instability	CXR: pneumothorax, rib fractures, hemothorax Ultrasound positive for pneumothorax Clinical diagnosis: requires immediate decompression. May verify using bedside ultrasound
Simple	Decompensation of simple pneumothorax	Diaphoresis	Above JVD, tracheal deviation, muffled heart sounds, cardiovascular collapse	
Tension				
COPD/asthma	Tobacco use, medication noncompliance, URI symptoms, sudden weather change PMH: environmental allergies FH: asthma	Air hunger, diaphoresis	Retractions, accessory muscle use, tripod, cyanosis	CXR: rule out infiltrate, pneumothorax, atelectasis (mucus plug) Waveform capnography
Malignancy	Weight loss, tobacco or other occupational exposure	Dysphagia	Hemoptysis	CXR, chest CT: mass, hilar adenopathy, focal atelectasis
Fluid overload	Gradual onset, dietary indiscretion or medication noncompliance, chest pain PMH: recent MI, diabetes, CHF	Worsening orthopnea, PND	JVD, peripheral edema, S ₃ or S ₄ gallop, new cardiac dysrhythmia, hepatjugular reflux	CXR: pleural effusion, interstitial edema, Kerley B lines, cardiomegaly ECG: ischemia, dysrhythmia NT-proBNP
Anaphylaxis	Abrupt onset, exposure to allergen	Dysphagia	Oral swelling, stridor, wheezing, hives	

ANCILLARY TESTING:

- BASIC WORK UP:
 - CXR
 - ABG if pulse oximetry unreliable
 - ECG
- Consider addition of imagery to rule out PE if this is factored in to differential consideration



This is the approach suggested in Rosen's. Major considerations are AMI, CHF, asthma/COPD, anaphylaxis, pneumonia, PE, haemopneumothorax.

Tailor your management to presumptive diagnosis