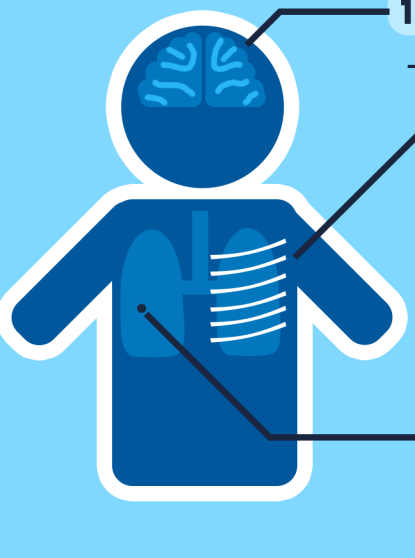
APPROACH TO DYSPNEA



1. Ventilatory Controller
- Brain

2. Ventilatory Pump
- Chest Wall
- Accessory Muscles
- Lungs

3. Gas Exchanger
- Alveoli
- Capillary

PHYSIOLOGICAL FRAMEWORK

Alterations in any of these 3 components can result in the sensation of shortness of breath.

RECEPTORS INVOLVED

Stretch Receptors	Irritant Receptors	J-Receptors	Mechanoreceptors
• COPD • Emphysema	Located in airways • Asthma • Viral Bronchitis	Next to capillaries streched w/ vessel • CHF	In the chest wall • Myasthenia Gravis • Guillain-Barré

HISTORY TAKING

COPD
- Increased wheezing
- Sputum changes
- Infectious / Environmental triggers or exposures

Heart Failure

Congestive symptoms:
- Edema • Orthopnea
- Weight gain
- Dietary indiscretion

Asthma
- Episodic breathlessness
- Triggers: -Cold -Smoke

Infection
- Fevers
- Chills
- Sputum

MG or NMJ related
- Peripheral or systemic weakness

*** Always consider the patient's history for context: PMHx, medications, exposures, etc.**

WORKING UP DYSPNEA

WORKING UP DYSPNEA

Tailor to your pretest probabilities !

- **Chest X-Ray**
  - Ubiquitous
  - Almost uniformly ordered in any dyspnea workup.

- **Infectious**
  - Resp Viral Panel
  - Flu
  - RSV
  - Adenovirus
  - COVID

- **Cardiovascular**
  - ACS: EKG
  - CHF: Pro-BNP

- **Labs**
  - CBC
  - CMP

BLOOD GAS

VBG
- When obtained peripherally it is of LOW yield

ABG
- If you are concerned about Acid-Base status or oxygenation, order an ABG.
- An ABG gives **systemic** information

	pH	PCO2	HCO3
Respiratory Acidosis	↓	↑	↑
Respiratory Alkalosis	↑	↓	↓
Metabolic Acidosis	↓	↓	↓
Metabolic Alkalosis	↑	↑	↑

Other Diagnostic Modalities

D-Dimer

Clinical stratification tool:
- Well's Criteria for PE

- If **Low to Intermediate Risk**:
  - Order a D-Dimer to rule out a PE.

- If **High Risk**:
  - CT CHEST, PE Protocol

POCUS

Point of Care Ultrasound

- **Lung examination**

Quick way to find pleural effusion vs consolidation

- **Cardiac structure eval**
  - Rough valvular assessment
  - Heart squeeze
  - IVC dilation