

# Respiratory Emergencies

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# Scenario 1

Dispatch notifies you of 54 YOF having trouble breathing.

## **Primary Assessment**

- Pt sitting in tripod position on a NC
- A&O4
- A - slight wheezing
- B - labored breathing, dyspneic, tachypneic
- C - pale, hot, sweaty

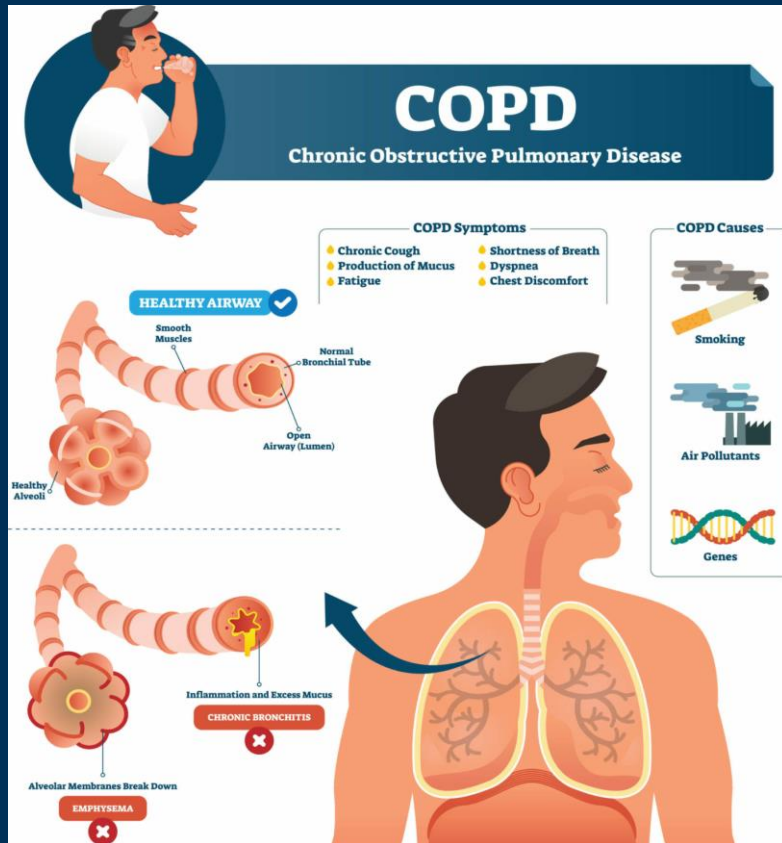
What is your field impression?



# COPD



# What is COPD?



COPD stands for Chronic Obstructive Pulmonary Disease. There are two types: chronic bronchitis and emphysema.

Signs and Symptoms

- low SpO<sub>2</sub>
- difficulty breathing



# Emphysema vs. Chronic Bronchitis

## Emphysema

The walls of the alveoli break down, greatly reducing the surface area for respiratory exchange.

### Signs and Symptoms

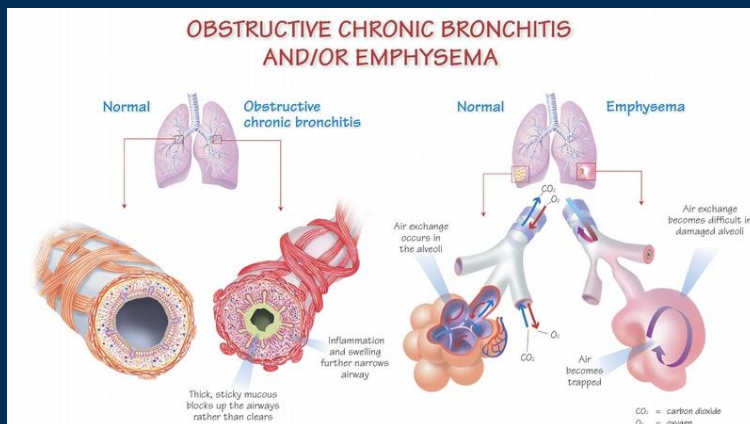
- tachypnea
- accessory muscle use
- decreased breath sounds
- barrel chest
- pursed lip breathing

## Chronic Bronchitis

The bronchiole lining is inflamed and excess mucus is formed. The cells in the bronchioles that normally clear away accumulations of mucus are not able to do so because the sweeping apparatus on these cells, the cilia, has been damaged or destroyed.

### Signs and Symptoms

- productive cough
- wheezing
- rhonchi
- often overweight
- cyanotic



## Scenario 1 (cont.)

Our patient states that while she normally has difficulty breathing, she is finding her current situation to be much worse than normal. She states that she gets a sharp chest pain that is more prominent upon inhalation. She has been gradually getting worse over the past 2 days.

We obtain these vitals:

HR = 90

RR = 24

BP = 140/90

SpO<sub>2</sub> = 89%

Lung Sounds = rhonchi

What is our diagnosis?



# Pneumonia



# What is Pneumonia?

Pneumonia is an infection of one or both lungs caused by bacteria, viruses, or fungi. It results from the inhalation of certain microbes that then grow in the lungs and cause inflammation. People with COPD or other respiratory diseases are more likely to get pneumonia. People with chronic health problems are also at higher risk.

## Signs and Symptoms

- Coughing (mucus can be greenish, yellow, or occasionally bloody)
- fever
- severe chills
- shortness of breath (either with or without exertion)
- chest pain that is sharp and pleuritic (worsens on inhalation)
- headache
- pale, sweaty skin
- fatigue
- confusion, especially in the elderly



# Treatment

- Use NC to ease breathing difficulty (switch to NRB if discomfort persists but do not let SpO<sub>2</sub> get above 92%)
- Request ALS
- Rapid Transport
- Place pt in position of comfort while transporting (either upright (full fowler) or fowler)

After treatment vitals:

HR = 90

RR = 18

BP = 140/90

SpO<sub>2</sub> = 91%

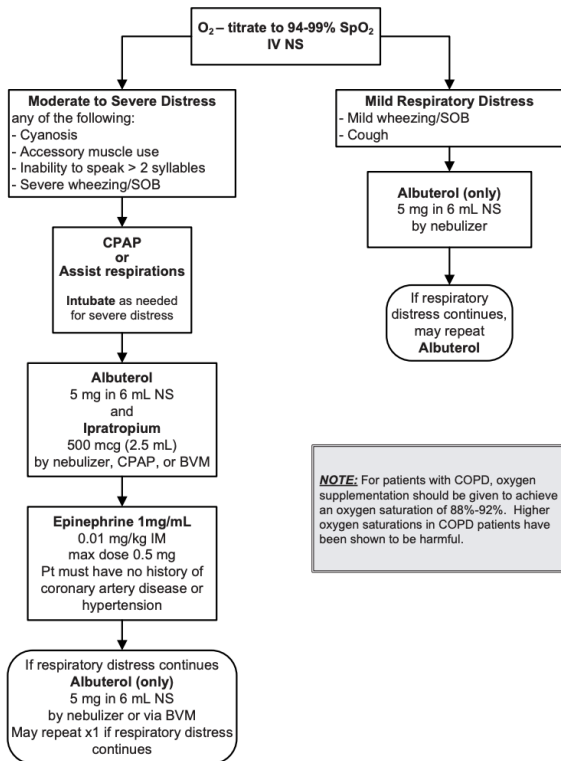
Lung Sounds = rhonchi



# Key Points

## RESPIRATORY DISTRESS

- Routine Medical Care
  - Asthma → COPD
  - Bronchospasm → Pulmonary edema (see page 45)
- Limit physical exertion, reduce patient anxiety



**NOTE:** For patients with COPD, oxygen supplementation should be given to achieve an oxygen saturation of 88%-92%. Higher oxygen saturations in COPD patients have been shown to be harmful.

While pt has SpO2 of 88%, this is actually healthy as the goal SpO2 of a pt with COPD is between 88-92%. Do not exceed this limit as it can be harmful.



# Bonus Questions

Q: Why do COPD patients have lower SpO<sub>2</sub>?

A: They develop a hypoxic drive to trigger respirations. In patients without COPD, the brain stem determines when to breathe based on increased levels of carbon dioxide in the blood. However, since COPD patients develop a tolerance to their body's high levels of carbon dioxide, the brain learns to rely, instead, on low oxygen levels as the trigger to breathe. The higher oxygen levels that result from oxygen administration may, in rare cases, signal the COPD patient to reduce or even to stop breathing (leading to respiratory arrest).

Q: What is the difference between bacterial and viral pneumonia?

A: Bacterial pneumonia tends to be more common and more severe than viral pneumonia. It's more likely to require a hospital stay. Providers treat bacterial pneumonia with antibiotics. Viral pneumonia causes flu-like symptoms and is more likely to resolve on its own.



# BMRC First Aid Protocol

- Obtain OPQRST, SAMPLE, and PASTE
- Place patient in a position of comfort
- Closely monitor vitals every 5 minutes
  - Call UCPD or 911
- Be ready to give a report to a provider of higher level care



# Scenario 2

## Dispatched to an escape room

- Patient is a 22 YOM having difficulty breathing

## Scene Size Up

- The room is dim and smoky from a nearby fog machine.
- Pt is sitting in tripod position
  - Pt states that they “Can’t get air in”
- A&Ox4

**A:** Audible wheezing

**B:** Labored, expiratory wheezing, prolonged expiration

- RR: 30
- BP: 142/86
- Lung sounds: diminished in lower lobes, no crackles

**C:** Pulse is rapid and strong, skin is slightly pale, cool

- HR: 118 bpm
- BP: 142/86
- SPO2: 91%

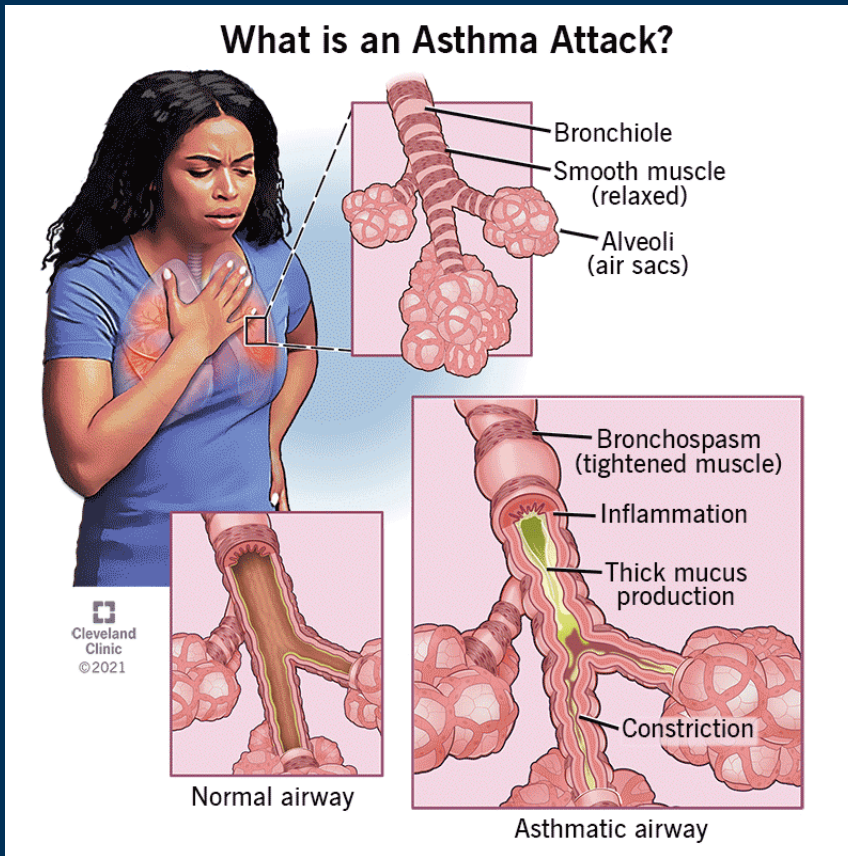


**What is your field impression?**

Correct Answer: Asthma Attack



# What is an Asthma Attack?



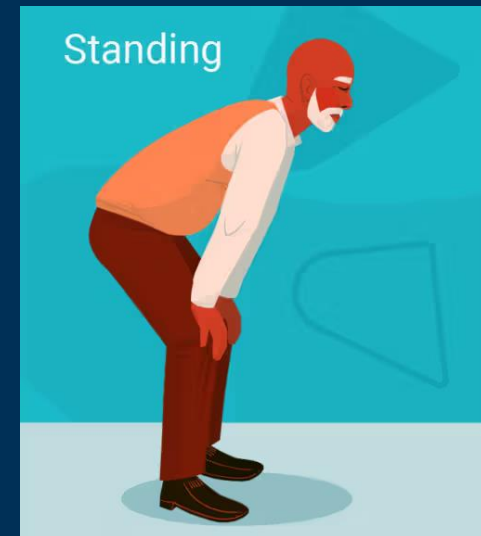
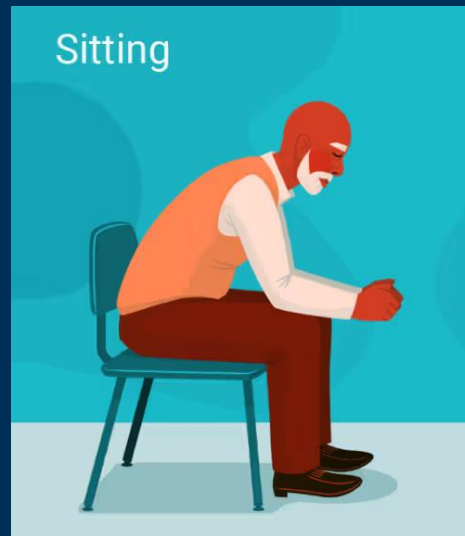
## Chronic inflammatory disease of the airways

- Causes airway narrowing (bronchoconstriction)
- Airways become swollen and produce excess mucus
- Leads to difficulty breathing
- Can range from mild to life-threatening
- Often triggered by environmental or internal factors



# Common Physical Presentation

- Shortness of breath
- Wheezing (sounds like high-pitched whistling)
- Persistent coughing
- Chest tightness
- Rapid breathing
- Difficulty speaking in full sentences
- Use of accessory muscles (neck/shoulders)
- Pale, sweaty, or anxious appearance
- Severe cases: cyanosis (blue lips/fingertips)



# Considerations

## **Common Triggers:**

- Allergens (dust, pollen, pet dander, mold)
- Exercise
- Cold air
- Respiratory infections
- Smoke (cigarettes, wildfire, vaping)
- Strong odors or chemicals
- Stress/emotional distress

## **Risk Factors:**

- Family history of asthma or allergies
- History of eczema or allergic rhinitis
- Exposure to secondhand smoke
- Occupational exposures

## **If left untreated, pt may experience the following:**

- Increasing fatigue
- Less pronounced wheezing
- SPO<sub>2</sub>: 88%



# Key Points & Treatment

## Key points:

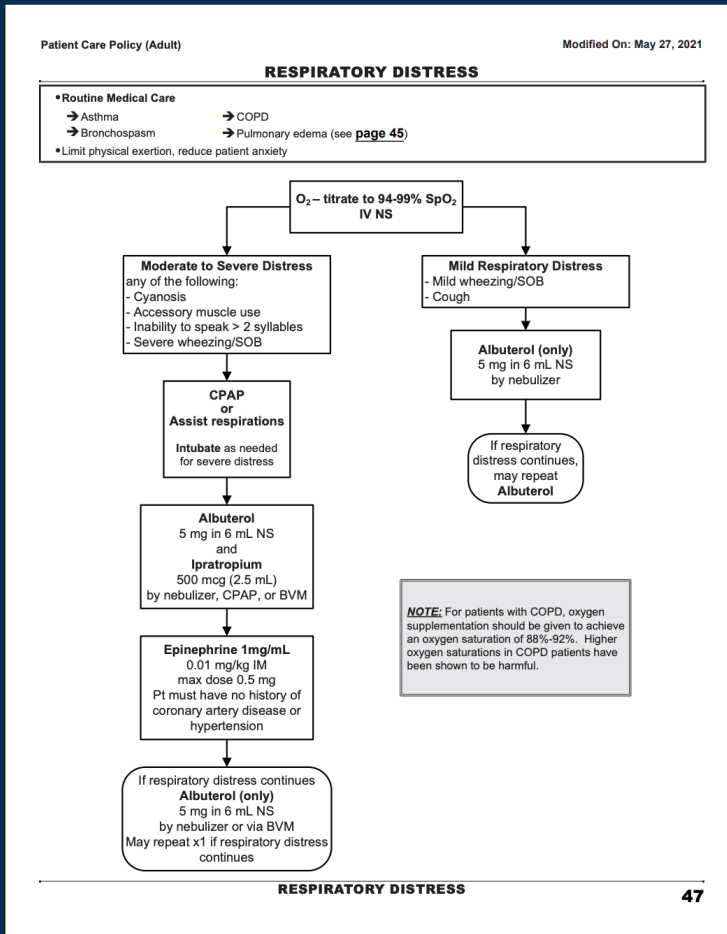
- Irritants can trigger asthma, not always just because of exercise
- Expiratory wheezing and prolonged expiration are key signs of asthma
- Decreased wheezing w/ worsening effort can signal “silent chest” (minimal or no air movement)
- Remove patient from environments w/ any triggers (dust, smoke, etc)
- Early intervention prevents respiratory failure
- Not all panic attacks are anxiety

## Treatment:

- move outside into fresh air
- high flow O<sub>2</sub> (NRB if possible)
- retrieve and assist w/ albuterol inhaler; albuterol per protocol
- consider ALS intercept
- monitor: mental status, how labored breathing is, lung sounds, SPO<sub>2</sub>
- prepare BVM if respiratory fatigue



# ALCO Protocol



- Check ABCs
- Administer Oxygen if needed
- Assist with prescribed inhaler (Albuterol)
  - *Indications:* Asthma, difficulty breathing with wheezing
  - *Contraindications:* Allergy, pain of Cardiac origin
  - 1-2 inhalations, wait 5 minutes in between
  - Side effects: Hypertension, Tachycardia, anxiety, restlessness



# First Aid Protocol

1. Stay calm and reassure the patient
    - a. Obtain SAMPLE & OPQRST
  2. Remove them from area with trigger (if applicable)
  3. Sit them upright (do NOT lay flat)
  4. Assist with inhaler
    - a. 1 puff every 30–60 seconds
    - b. If no improvement → repeat puff
  5. Call UCPD/911 if:
    - No improvement after second round
    - Symptoms are severe
    - Person cannot speak or is worsening
1. Continue 1 puff every minute until help arrives (if needed)
  2. Be ready to give a report to a higher-level-of-care provider.



# Kahoot Time!

