

# NBRC RRT - Quiz Questions with Answers

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## CSE 1. Patient Data

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CSE 1. Patient Data

1.

Use the following scenario to answer this question.

Which of the following BEST describes why a bronchoalveolar lavage would be performed on this patient?

(CHOOSE ONLY ONE.)

**To better diagnose the patient's condition**

To reduce the burden of irritants that may be causing the patient's condition

A bronchoalveolar lavage should not have been performed on this patient

To better understand the efficacy of treatments that have been implemented

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*Correct answer: To better diagnose the patient's condition*

*A bronchoalveolar lavage is a diagnostic procedure and is performed to better diagnose the patient's condition.*

*A bronchoalveolar lavage will not meaningfully reduce the burden of irritants causing the patient's condition and will not typically yield information about the efficacy of treatments.*

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**2.**

Use the following scenario to answer this question.

Which of the following are **LIKELY** true regarding the patient's pneumonia?

(SELECT AS MANY as you consider indicated.)

**It may be unclear where she got it from**

**Accidentally inhaling some bacteria while swimming could have been a potential cause**

**Accidentally inhaling some bacteria while eating could have been a potential cause**

Accidentally inhaling some bacteria while at the dentist could have been a potential cause

Exposure to respiratory infection while working in a doctor's office may have been a potential cause

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*Community-acquired pneumonia is acquired outside of a healthcare setting. Accidentally inhaling some bacteria while swimming or eating could have been potential causes of community-acquired pneumonia. It may also be unclear where it came from.*

*Exposure to infectious organisms during dental procedures or while working in a healthcare setting would more likely be considered nosocomial pneumonia, not community-acquired pneumonia.*

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**3.**

Use the following scenario to answer this question.

Which of the following tests could help reveal if the change in the patient's condition was due to an MI?

(SELECT AS MANY as you consider indicated.)

**Troponin I**

**EKG**

Chest CT with contrast

Chest MRI

ABG

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*Checking a troponin level and doing an EKG could both reveal if the cause of the change in the patient's condition could be due to an MI.*

*A CT with contrast, chest MRI, and ABG may all be indicated to evaluate other potential causes of the change. However, they are not likely to indicate if an MI was the cause of the change.*

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**4.**

Use the following scenario to answer this question.

Which of the following conditions should the respiratory therapist MOST suspect based on the patient's symptoms?

(SELECT AS MANY as you consider indicated.)

**Tuberculosis**

**Pneumonia**

Pulmonary hypertension

Myocardial infarction

Cellulitis

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*Tuberculosis and pneumonia are both pulmonary infections that may be potential causes of the patient's symptoms.*

*A persistent cough and fever are not typically symptoms of pulmonary hypertension, myocardial infarction, or cellulitis. While cellulitis may cause a persistent fever, it is not likely to result in respiratory complaints in most situations.*

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**5.**

Use the following scenario to answer this question.

Which of the following medications would the respiratory therapist anticipate that the patient may be discharged with as new prescriptions?

(SELECT AS MANY as you consider indicated.)

**Steroids**

**Bronchodilators**

**PO antibiotics**

Home oxygen

Lasix

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*Depending on the patient's condition at discharge, steroids, bronchodilators, and PO antibiotics may all be potential new prescriptions. Steroids could be used to decrease tracheal inflammation, bronchodilators may be prescribed as a rescue medication for tracheal stenosis exacerbation, and PO antibiotics may be used to continue treatment for pneumonia.*

*Home oxygen is very unlikely to be prescribed, as treated pneumonia or tracheal stenosis are both unlikely to result in the ongoing need for oxygen therapy at home. Lasix may be an existing prescription given the patient's history of heart failure, but should not be a new prescription based on the patient's course of hospitalization.*

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**6.**

Use the following scenario to answer this question.

Which of the following is MOST a risk factor for tuberculosis in this patient?

(CHOOSE ONLY ONE.)

**Living location**

Recent travel

History of childhood asthma

History of MI

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*Correct answer: Living location*

*The patient has just spent two months living in a developing country where exposure to tuberculosis is more likely.*

*Traveling, by itself, is not likely to significantly increase the risk of exposure to tuberculosis. A history of childhood asthma or an MI does not significantly increase the risk of developing tuberculosis.*

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**7.**

Use the following scenario to answer this question.

Which of the following facts would MOST reduce the healthcare team's suspicion that the patient had hypersensitivity pneumonitis?

(CHOOSE ONLY ONE.)

**While the patient works in a store selling pet parrots, he is never actually exposed to the birds**

The patient actually only ingests marijuana; he has not smoked it in years

The patient also has frequent exposure to wood pulp

The patient has a history of childhood asthma

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*Correct answer: While the patient works in a store selling pet parrots, he is never actually exposed to the birds*

*Exposure to avian proteins is a risk factor for hypersensitivity pneumonitis. If the patient is never actually exposed to avian proteins, hypersensitivity pneumonitis becomes a less likely diagnosis.*

*The use of marijuana is not a significant risk factor for hypersensitivity pneumonitis. Frequent exposure to wood pulp suggests an additional irritant, strengthening the potential diagnosis of hypersensitivity pneumonitis. A history of asthma as a child does not affect the potential that the diagnosis will be hypersensitivity pneumonitis.*

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**8.**

Use the following scenario to answer this question.

Which of the following vital signs are likely to be impacted by this patient's condition?

(SELECT AS MANY as you consider indicated.)

**Blood pressure**

**Oxygen saturation**

**Respiratory rate**

Temperature

Heart rate

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*The patient likely has obstructive sleep apnea (OSA). OSA can lead to chronic hypertension. During the night it causes periods of apnea that may affect respiratory rate and oxygen saturation.*

*OSA is not likely to affect temperature or heart rate in any meaningful way.*

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**9.**

Use the following scenario to answer this question.

Which of the following makes a normal home discharge impossible?

(CHOOSE ONLY ONE.)

**A discharge home under these conditions is possible**

The patient lives alone without available support

The patient must use stairs to get to his place of residence

The patient will be exposed to cat dander

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*Correct answer: A discharge home under these conditions is possible*

*If the patient's pneumonia has resolved and the tracheal stenosis has been treated, there are no contraindications to him returning home. Living alone, having to use a flight of stairs, or being exposed to cat dander will not affect resolved pneumonia or treated tracheal stenosis.*

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**10.**

Use the following scenario to answer this question.

Which of the following should be inferred from the patient's X-ray?

(CHOOSE ONLY ONE.)

**The patient may have tuberculosis; however, the chest X-ray is insufficient to make a diagnosis**

The patient does not likely have tuberculosis, as no pleural effusion is present

The patient does not likely have tuberculosis, as no infiltrates are present

The patient almost certainly has tuberculosis

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*Correct answer: The patient may have tuberculosis; however, the chest X-ray is insufficient to make a diagnosis*

*Hilar lymphadenopathy is present in 65% of patients with tuberculosis. The patient may have tuberculosis; however, the chest X-ray is insufficient to make a diagnosis.*

*Pleural effusions and infiltrates are seen on chest X-rays of patients with tuberculosis, but not in the majority of cases.*

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**11.**

Use the following scenario to answer this question.

Which of the following MOST likely increased the patient's risk of pulmonary infection?

(CHOOSE ONLY ONE.)

**The recent bronchoscopy**

Medications used to treat tracheal stenosis

Recent hospitalization

The patient's past medical history

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*Correct answer: The recent bronchoscopy*

*A bronchoscopy increases the risk of pulmonary infections by increasing the risk of introducing pathogens into the respiratory tract.*

*Medications used to treat tracheal stenosis may include steroids that could increase the risk of pulmonary infection; however, the recent bronchoscopy is much more likely to increase this risk. Recent hospitalization is also a risk factor, but is not as important a risk factor as a recent bronchoscopy. The patient's past medical history does not significantly increase the risk of pulmonary infection.*

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**12.**

Use the following scenario to answer this question.

How does a large right-sided pneumothorax appear on a chest radiograph?

(CHOOSE ONLY ONE.)

**As a large, dark area in the affected lung field**

As a solid white area in the affected lung field

As diffuse opacities in the affected lung field

As patches of dark areas in the affected lung field

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*Correct answer: As a large, dark area in the affected lung field*

*A pneumothorax appears on a chest radiograph as a large dark area that represents air through which the rays pass without obstruction or resistance.*

*None of the other answer choices correctly represent how a pneumothorax appears on a chest radiograph.*

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**13.**

Use the following scenario to answer this question.

Which of the following conditions is MOST likely to explain this patient's symptoms?

(CHOOSE ONLY ONE.)

**Obstructive sleep apnea**

Chronic fatigue syndrome

Narcolepsy

Pulmonary hypertension

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*Correct answer: Obstructive sleep apnea*

*Obstructive sleep apnea (OSA) causes excessive daytime sleepiness and frequently causes hypertension that is considered idiopathic prior to a diagnosis of OSA. In many cases, OSA does not result in wakening that is actually appreciated by the patient.*

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**14.**

Use the following scenario to answer this question.

Which of the following conditions BEST explains the sudden change in the patient's condition?

(CHOOSE ONLY ONE.)

**He has developed a pulmonary embolism**

His hypersensitivity pneumonitis has suddenly worsened

He has developed a myocardial infarction

He is developing pneumonia

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*Correct answer: He has developed a pulmonary embolism*

*A sudden onset of dyspnea, pink, frothy sputum, and chest pain are most indicative of a pulmonary embolism.*

*A myocardial infarction is less likely to cause the decreased O<sub>2</sub> saturation and pink, frothy sputum. Chest X-ray changes would be expected with pneumonia. The patient's symptoms are more consistent with a pulmonary embolism than they are with a worsening of hypersensitivity pneumonitis.*

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**15.**

Use the following scenario to answer this question.

Which of the following is the MOST likely cause of this patient's symptoms?

(CHOOSE ONLY ONE.)

**Hypersensitivity pneumonitis**

Pneumonia

New onset of asthma

Pulmonary hypertension

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*Correct answer: Hypersensitivity pneumonitis*

*Hypersensitivity pneumonitis is an inflammatory interstitial lung condition that can be caused by exposure to irritants, such as animal protein.*

*Pneumonia is not likely to cause wheezing or diffuse ground-glass opacities and areas of consolidation on a chest X-ray. The chest X-ray is not consistent with a new onset of asthma, although other symptoms may be. Pulmonary hypertension is not characterized by wheezing.*

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**16.**

Use the following scenario to answer this question.

Which of the following tests are MOST likely to help confirm a diagnosis of hypersensitivity pneumonitis?

(SELECT AS MANY as you consider indicated.)

**Inhalation challenge test**

**Precipitin test**

Blood cultures

Bronchoscopy

Pulmonary artery wedge pressure

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*Hypersensitivity pneumonitis is caused by immune-mediated inflammation of the lung interstitium. An inhalation challenge test evaluates if a particular substance is noxious to the lungs. A precipitin test evaluates for the presence of antigens that could cause hypersensitivity pneumonitis.*

*Blood cultures, bronchoscopy, or pulmonary artery wedge pressure evaluation would not reveal interstitial lung inflammation.*

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**17.**

Use the following scenario to answer this question.

Which of the following dispositions would the respiratory therapist anticipate for this patient?

(CHOOSE ONLY ONE.)

**Admission to a med/surg unit for further treatment and management**

Admission to an intensive care unit for mechanical ventilation

Discharge home with home oxygen

Discharge home with pulmonary rehab

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*Correct answer: Admission to a med/surg unit for further treatment and management*

*The patient's oxygen saturation and pO<sub>2</sub> are technically normal, however, they are borderline. The patient also has uncompensated respiratory acidosis and is still dyspneic beyond what a COPD patient should be at their baseline. Due to the COPD exacerbation, the patient should be admitted.*

*There are several interventions for this patient that are likely to be effective prior to the need for mechanical ventilation.*

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**18.**

Use the following scenario to answer this question.

Which of the following are first-line antituberculous medications?

(SELECT AS MANY as you consider indicated.)

**Isoniazid**

**Rifampin**

**Pyrazinamide**

**Ethambutol**

Azithromycin

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*First-line treatments for tuberculosis include isoniazid, rifampin, pyrazinamide, and ethambutol.*

*Azithromycin is not considered to be among first-line treatments for tuberculosis.*

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**19.**

Use the following scenario to answer this question.

Which of the following BEST describes the pathology of hypersensitivity pneumonitis?

(CHOOSE ONLY ONE.)

**An immune reaction to inhaled antigens causes interstitial lung inflammation**

An immune reaction to inhaled antigens causes inflammation of the upper airways

Inhaled irritants cause microscopic scarring of the alveoli

Inhaled irritants cause an increase in the pressure within pulmonary blood vessels

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*Correct answer: An immune reaction to inhaled antigens causes interstitial lung inflammation*

*Hypersensitivity pneumonitis is an interstitial lung condition that is caused by an immune-mediated inflammatory reaction. It is not related to upper airway inflammation, scarring of the alveoli, or pulmonary hypertension.*

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**20.**

Use the following scenario to answer this question.

Which of the following would be indicators that the patient is developing a tension pneumothorax?

(SELECT AS MANY as you consider indicated.)

**Absent breath sounds on the right side**

**The patient is developing worsening dyspnea**

Tracheal shift to the right

Blood or air escaping out of the entry wound

There is only an entry wound, not an exit wound

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*Absent breath sounds on the affected side and worsening dyspnea are both indicators of a tension pneumothorax.*

*A tracheal shift away from, not toward the affected side also indicates a tension pneumothorax. Blood or air escaping out of the entry wound indicates that air is not being retained in the pleural space, indicating that a tension pneumothorax is less likely. The absence of an exit wound does not necessarily indicate a tension pneumothorax.*

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**21.**

Use the following scenario to answer this question.

Which of the following are indicated by the ABG?

(SELECT AS MANY as you consider indicated.)

**Acidosis**

**Acid-base imbalance with a respiratory origin**

Alkalosis

Acid-base imbalance with a metabolic origin

Severe hypoxia

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*The patient does have uncompensated respiratory acidosis, as indicated by the low pH and elevated PaCO<sub>2</sub>.*

*The patient does have hypoxia; however, it would not be considered severe, as it is close to the minimum normal value of 80 mmHg. The acid-base imbalance does not have a metabolic origin and is not alkalotic.*

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**22.**

Use the following scenario to answer this question.

Which of the following is important for the respiratory therapist to keep in mind during air transportation of this patient?

(CHOOSE ONLY ONE.)

**Decreased pressure during flight may worsen the patient's symptoms**

Decreased pressure during flight may improve the patient's symptoms

Decreased pressure during flight are not going to affect the patient's symptoms

Oxygen concentration changes, not decreased pressure during flight, may affect the patient

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*Correct answer: Decreased pressure during flight may worsen the patient's symptoms*

*As air pressure decreases, the pressure in the pleural space has less resistance from the lungs and may expand.*

*Decreased pressure during flight is not likely to improve the patient's symptoms. Oxygen concentration changes may also affect the patient, but are not the only factor that may affect the patient.*

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**23.**

Use the following scenario to answer this question.

Which of the following interventions would have been MOST likely to help prevent this patient from developing pneumonia?

(CHOOSE ONLY ONE.)

**Immunization**

Smoking cessation education

Hormone replacement therapy

A low carb diet

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*Correct answer: Immunization*

*Influenza vaccination reduces the incidence of community-acquired pneumonia by about half in individuals over 60.*

*Smoking cessation education would only be helpful if the patient is still smoking and if the education resulted in a behavioral change. Hormone replacement therapy would not significantly lower the risk of developing community-acquired pneumonia. A low carb diet may have reduced obesity, in turn reducing the risk of community-acquired pneumonia occurring. This is, however, less likely to have been effective as a prevention method when compared to immunization.*

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**24.**

Use the following scenario to answer this question.

Which of the following risk factors is MOST likely causing the patient's symptoms?

(CHOOSE ONLY ONE.)

**Exposure to bird products**

Smoking marijuana

Being single

Lower socioeconomic status

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*Correct answer: Exposure to bird products*

*Exposure to bird products can lead to hypersensitivities that can result in the symptoms described.*

*Smoking marijuana is unlikely to result in the more rapid onset of the symptoms described. The ideas that the patient is single or of a lower socioeconomic status cannot be inferred from the scenario and are not the most prevalent risk factors for this constellation of symptoms.*

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**25.**

Use the following scenario to answer this question.

Which of the following is the patient's Glasgow Coma Score?

(CHOOSE ONLY ONE.)

7

10

8

9

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*Correct answer: 7*

*Confused speech is scored as a 4, eye opening only to painful stimuli is scored as a 2. No motor response of any kind to pain is scored as a 1. This gives a total Glasgow Coma Score score of 7.*

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**26.**

Use the following scenario to answer this question.

Which of the following assessments would be MOST important for the respiratory therapist to perform next?

(CHOOSE ONLY ONE.)

**Evaluating the chest wall for symmetrical movement**

Asking the patient about their medication history

Checking the patient's level of consciousness

Checking the patient's capillary refill

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*Correct answer: Evaluating the chest wall for symmetrical movement*

*Assessing airway and breathing should always precede other forms of assessment.*

*Checking circulatory status, neurological status, or medication history is secondary to completing assessment of airway and breathing.*

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**27.**

Use the following scenario to answer this question.

Which of the following interventions may have reduced the risk of the change that occurred in the patient's condition?

(SELECT AS MANY as you consider indicated.)

**Applying sequential compression devices**

**Encouraging frequent ambulation**

Encouraging the patient to conserve his energy

Promoting the use of a bedpan or urinal to avoid over exertion

Initiating a psychiatric consult

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*The patient likely has a pulmonary embolism; a complication generally associated with prolonged immobility. Applying sequential compression devices or encouraging frequent ambulation would have reduced this risk.*

*Encouraging the patient to conserve his energy or promoting the use of a bedpan or urinal to avoid over exertion would encourage, not discourage, immobility. Initiating a psychiatric consult would not have meaningfully reduced the risk of pulmonary embolism.*

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**28.**

Use the following scenario to answer this question.

Which of the following is the condition the patient develops while on the med/surg floor MOST likely to be?

(CHOOSE ONLY ONE.)

**Nosocomial pneumonia**

Community-acquired pneumonia

Exacerbation of the initial condition

Exacerbation of congestive heart failure

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*Correct answer: Nosocomial pneumonia*

*The patient's symptoms are most consistent with pneumonia. The length of hospitalization at the onset of symptoms and the history of a recent bronchoscopy both suggest that the infection was nosocomial, or hospital-acquired, pneumonia rather than community-acquired pneumonia.*

*The unilateral opacities and rust-colored sputum make a diagnosis of congestive heart failure unlikely. The initial condition was tracheal stenosis, and the patient's symptoms are not consistent with worsening of this condition.*

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**29.**

Use the following scenario to answer this question.

Which of the following are significant risk factors for pneumonia?

(SELECT AS MANY as you consider indicated.)

**Smoking history**

**Morbid obesity**

**Patient's age**

History of cervical cancer

History of radical hysterectomy

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*The risk of developing pneumonia is increased in those with a meaningful smoking history, those over 60 years old, or those with morbid obesity.*

*A history of cervical cancer or of a radical hysterectomy are not meaningful risk factors for developing pneumonia.*

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**30.**

Use the following scenario to answer this question.

Which of the following is MOST important to remember while treating this patient?

(CHOOSE ONLY ONE.)

**Other injuries should also be assessed for**

All the attention should be focused on maintaining the patient's airway

Preventing reoccurrence of the tension pneumothorax should be the sole concern during transport

Thorough assessment of other injuries should be deferred until the patient's transfer is complete

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*Correct answer: Other injuries should also be assessed for*

*While the majority of the attention will be on the potentially life-threatening tension pneumothorax, the respiratory therapist must keep in mind that other injuries affecting the patient may have occurred during the trauma. These other injuries should be assessed for as soon as the life-threatening injury is addressed.*

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**31.**

Use the following scenario to answer this question.

Which of the following interventions are MOST appropriate to further evaluate this patient's condition?

(SELECT AS MANY as you consider indicated.)

**Chest X-ray**

**Sputum culture**

Pulmonary artery wedge pressure

Incentive spirometry

Head CT

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*The patient's symptoms are most consistent with pneumonia. A chest X-ray and sputum culture are appropriate interventions for further evaluating this patient's condition.*

*Pulmonary artery wedge pressure is invasive and not indicated for suspected pneumonia. A head CT is not indicated for suspected pneumonia. Incentive spirometry may be beneficial for this patient; however, it will not help to further evaluate this patient's condition.*

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**32.**

Use the following scenario to answer this question.

Assuming that the patient was treated using a tracheal stent, which of the following are common complications with tracheal stenting?

(SELECT AS MANY as you consider indicated.)

**Stent migration**

**Infection**

**Stent obstruction**

Thrombosis

Tracheal rupture

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*Stent migration, infection, and stent obstruction are all common complications that can affect tracheal stents.*

*Thrombosis may be a complication of vascular stents, but not tracheal stents.  
Tracheal rupture during stent placement is very unlikely.*

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**33.**

Use the following scenario to answer this question.

Which of the following is MOST important for the respiratory therapist to tell the patient when giving discharge instructions?

(CHOOSE ONLY ONE.)

**"You should return to the hospital if you begin having any problems breathing."**

"You should try not to have pets if possible."

"You should watch for potential symptoms of allergic reaction to the IV antibiotics you received here."

"Be aware that the medications you are being discharged with may cause your heart failure to get worse."

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*Correct answer: "You should return to the hospital if you begin having any problems breathing."*

*The patient likely had a tracheal stent placed. Tracheal stent complications can lead to dyspnea. Difficulty breathing should cause the patient to return to the hospital for evaluation.*

*Eliminating exposure to pets is not necessary. Allergic reactions to IV antibiotics are unlikely once they are completed and the patient is no longer receiving them. Given the patient's course of treatment and hospitalization, it is unlikely that the patient is being discharged on any medications that would exacerbate heart failure.*

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# CSE 2. Troubleshooting and Quality Control of Devices, and Infection Control

CSE 2. Troubleshooting and Quality Control of Devices, and Infection Control

34.

Use the following scenario to answer this question.

Based on the information provided, which of the following interventions are BEST to recommend for this patient?

(SELECT AS MANY as you consider indicated.)

**Chest X-ray**

**Sputum culture**

EKG

ABG

Ultrasound evaluation of the patient's pulmonary arteries

*Chest X-ray and sputum culture are both indicated for a suspected pulmonary infection.*

*An EKG is unlikely to be relevant for a complaint that consists solely of a persistent cough and fever. An ABG will be painful and invasive, and is not likely necessary given the information provided about this patient. Ultrasound evaluation of a patient's pulmonary arteries is not routinely performed or practical.*

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**35.**

Use the following scenario to answer this question.

Which of the following radiographic signs would indicate a diagnosis of laryngotracheobronchitis?

(CHOOSE ONLY ONE.)

**Steeple sign**

Thumb sign

Honeycomb sign

Bat wing sign

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*Correct answer: Steeple sign*

*Steeple sign indicates subglottic narrowing, as is typically diagnostic for laryngotracheobronchitis (croup).*

*Thumb sign is an indication of epiglottitis. Honeycomb sign indicates interstitial fibrosis. Bat wing sign can indicate a number of different conditions, but is not indicative of croup.*

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**36.**

Use the following scenario to answer this question.

Which of the following would make the respiratory therapist suspect that the data obtained may be incorrect?

(CHOOSE ONLY ONE.)

**The ABG was not labeled, but remained in the patient's room until it was ready to be analyzed**

The patient's oxygen saturation was taken on his ear, not his finger

The ABG sample sat for 42 minutes before it was actually tested

The radiology technician that took the chest X-ray only had three months of experience

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*Correct answer: The ABG was not labeled, but remained in the patient's room until it was ready to be analyzed*

*Failure to label laboratory tests, such as an ABG, can result in the samples being attributed to the wrong patient.*

*An SpO2 may be taken on a patient's ear and still be accurate. An ABG may be run up to 60 minutes after being drawn if stored correctly. Just because a member of the clinical staff is new does not necessarily mean that the results of tests they perform are likely to be inaccurate.*

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**37.**

Use the following scenario to answer this question.

Which of the following is CORRECT about the sputum culture that was performed?

(SELECT AS MANY as you consider indicated.)

**It may take over four weeks for results**

**It is the gold standard for diagnosing tuberculosis**

It will take 24 hours for results to be available

It will provide an indication of whether a pulmonary embolism is present

It cannot be performed after the patient has received antibiotics

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*A sputum culture is the gold standard for diagnosing tuberculosis; however, results may take 4 to 6 weeks, as it may take that long for M. tuberculosis to grow.*

*It will generally take far longer than 24 hours for results. A sputum culture will not provide an indication of whether a pulmonary embolism is present. A sputum culture can be performed after administration of antibiotics, but becomes less likely to detect infectious organisms afterward.*

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**38.**

Use the following scenario to answer this question.

Which of the following MOST likely explains the patient's change in condition?

(CHOOSE ONLY ONE.)

**They have developed sepsis**

They are having a stroke

Their pneumonia is causing respiratory failure

They are having an allergic reaction to levofloxacin

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*Correct answer: They have developed sepsis*

*The patient has an infection for which treatment was delayed. They also have a decreasing blood pressure, increasing temperature, and increasing heart rate. This indicates that the patient is likely developing septic shock. The decreased level of consciousness and decline in respiratory status is most likely sequela from septic shock.*

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**39.**

Use the following scenario to answer this question.

Which of the following tests are **LIKELY** to be performed during a polysomnogram to monitor sleep stage?

(SELECT AS MANY as you consider indicated.)

**Electroencephalogram (EEG)**

**Electroculogram (EOG)**

**Chin electromyogram (EMG)**

Electrocardiogram (ECG)

Electroconvulsive therapy (ECT)

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*During a polysomnogram, an electroencephalogram (EEG), electroculogram (EOG), and chin electromyogram (EMG) are all used to monitor sleep stage.*

*An ECG may be performed; however, it is not used to monitor sleep stage. Electroconvulsive therapy (ECT) is not ever used during a polysomnogram.*

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**40.**

Use the following scenario to answer this question.

Which of the following should be inferred from the patient's ABG?

(SELECT AS MANY as you consider indicated.)

**Acid-base imbalance with a respiratory cause**

**Acidosis**

**Hypoxia**

Acid-base imbalance with a metabolic cause

Alkalosis

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*The low pH, elevated PaCO<sub>2</sub>, and normal HCO<sub>3</sub> all indicate uncompensated respiratory acidosis. The patient's PaO<sub>2</sub> is low and indicates hypoxia.*

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**41.**

Use the following scenario to answer this question.

Which of the following findings reinforces the idea that the recent change in the patient's condition was due to a pulmonary embolism?

(CHOOSE ONLY ONE.)

**He has remained in bed during his hospitalization**

He has traveled outside of the country within the last 30 days

A family member brought his pet parrot in to visit him

He snuck outside to smoke marijuana more than once during his hospitalization

---

*Correct answer: He has remained in bed during his hospitalization*

*Immobility is a risk factor for developing pulmonary embolisms (PEs), and remaining in bed for two days would be a risk factor for a PE.*

*Recent travel may increase the risk of tuberculosis or other respiratory complications, but is not more likely to increase the risk of a PE than recent immobility. Recent exposure to avian protein increases the risk of hypersensitivity pneumonitis exacerbation, not PE. Smoking marijuana does not significantly increase the risk of developing a PE.*

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**42.**

Use the following scenario to answer this question.

What BEST describes the rationale for ordering cool mist therapy?

(CHOOSE ONLY ONE.)

**No evidence shows it to be effective in treating laryngotracheobronchitis**

It has been shown to be effective in treating laryngotracheobronchitis; however, it is not known why

It decreases upper airway inflammation by decreasing the temperature of the tissues

The humidity it provides improves oxygenation

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*Correct answer: No evidence shows it to be effective in treating laryngotracheobronchitis*

*No evidence shows that cool mist therapy is actually effective in treating laryngotracheobronchitis. While the use of this form of therapy is not contraindicated, it has not been shown to be effective in treating croup.*

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**43.**

Use the following scenario to answer this question.

If sepsis is suspected, which of the following is MOST correct?

(CHOOSE ONLY ONE.)

**Antibiotic therapy should be initiated without delays for anything**

The first set of blood cultures should be drawn prior to starting the IV antibiotics

A sputum culture should be obtained prior to starting the IV antibiotics

All sets of blood cultures and a sputum culture should be obtained prior to starting the IV antibiotics

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*Correct answer: Antibiotic therapy should be initiated without delays for anything*

*While it is ideal to obtain cultures prior to initiating antibiotic therapy, the administration of antibiotics should not be delayed for someone who is acutely ill just so that cultures can be obtained. The risks of delaying therapy do not outweigh the benefits of having culture results.*

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**44.**

Use the following scenario to answer this question.

How could performing a chest X-ray prior to intubation affect the patient's intubation or ventilation?

(SELECT AS MANY as you consider indicated.)

**It would guide  $V_T$  settings**

**It could allow for the detection of ARDS**

It would allow for evaluation of ET tube placement

It would guide FIO2 settings

It could allow for the detection of septic shock

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*Performing a chest X-ray prior to intubation would indicate if the patient has ARDS. If the patient does have ARDS, it will change the  $V_T$  settings needed, as tidal volumes must be reduced for patients with ARDS.*

*Chest X-ray prior to intubation would not allow for evaluation of ET tube placement. A chest X-ray will not detect septic shock and will not typically alter the FIO2 used.*

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**45.**

Use the following scenario to answer this question.

If a chest tube was placed, which of the following would MOST likely be an indicator that the chest tube is not correctly set up?

(CHOOSE ONLY ONE.)

**There is no tidal movement in the water seal chamber**

Wall suction is set higher than the ordered suction

There is bubbling in the water seal chamber

There is subcutaneous emphysema around the injury site

---

*Correct answer: There is no tidal movement in the water seal chamber*

*Tidaling in the water seal chamber should be noted as the patient inspires and expires. The absence of this could indicate the chest tube is not correctly set up.*

*Wall suction should be set higher than the ordered suction, and the suction should be controlled using the water seal, not the wall suction. Bubbling in the water seal chamber is normal if air is still escaping the pleural space. Subcutaneous emphysema around the injury site is not abnormal; however, if it continues to develop after the chest tube is placed, it may indicate a problem with the chest tube.*

---

**46.**

Use the following scenario to answer this question.

Which of the following is CORRECT regarding the patient's PPD test?

(CHOOSE ONLY ONE.)

**It cannot rule out the possibility that tuberculosis is present**

It conclusively shows the patient does not have tuberculosis

It is likely that it is a false negative

It cannot be repeated for at least three months

---

*Correct answer: It cannot rule out the possibility that tuberculosis is present*

*A negative PPD test does not rule out the possibility that tuberculosis is present, especially if the infection may have been recent.*

*The PPD test can, and should, be repeated within three months, as it may take 3-8 weeks after infection for the PPD test to be positive if an infection is present. The PPD test is not likely to be a false negative; rather, it is likely that if infection is present, it is not advanced enough to be detected using a PPD test.*

---

**47.**

Use the following scenario to answer this question.

Which of the following will BEST help determine if tracheomalacia is present?

(CHOOSE ONLY ONE.)

**Laryngoscopy**

Bronchoscopy

Chest CT

Head MRI

---

*Correct answer: Laryngoscopy*

*Laryngoscopy allows for direct visualization of the trachea, best providing an indication of if tracheomalacia is present.*

*Bronchoscopy does not provide visualization of the trachea like laryngoscopy does. A chest CT or head MRI would not allow for direct visualization of the trachea.*

---

**48.**

Use the following scenario to answer this question.

Which of the following precautions should be implemented for this patient?

(SELECT AS MANY as you consider indicated.)

**Standard precautions**

**Airborne precautions**

Droplet precautions

Contact precautions

No extra precautions are necessary

---

*Standard precautions and airborne precautions should be implemented for this patient, as it is possible they have tuberculosis. These precautions should be maintained until tuberculosis has been ruled out.*

*Droplet precautions or contact precautions are not indicated for suspected tuberculosis.*

---

**49.**

Use the following scenario to answer this question.

The respiratory therapist suspects that the airway is obstructed by secretions and attempts to suction the patient's airway. The suction device, however, is not working. Which of the following interventions is NOT correct?

(CHOOSE ONLY ONE.)

**Deferring suctioning and applying a non-rebreather**

Making sure the suction is on at the wall

Checking if the suction tubing is kinked

Making sure the suction canister is set up correctly

---

*Correct answer: Deferring suctioning and applying a non-rebreather*

*If the suction device is not working and the respiratory therapist suspects that the airway is obstructed by secretions, then suctioning should not be deferred.*

*Making sure the suction is on at the wall, checking if the suction tubing is kinked, and making sure the suction canister is set up correctly are all correct responses that may repair suctioning equipment and enable the respiratory therapist to ensure the patient's airway is patent.*

---

**50.**

Use the following scenario to answer this question.

Which of the following are CORRECT when considering the public health risks associated with this patient?

(SELECT AS MANY as you consider indicated.)

**He will likely need to have his participation in treatment observed on a daily basis**

**His location and past interactions will be traced by public health officials**

**The patient may not be permitted to refuse to comply with some treatment recommendations**

He will be confined to his house for at least 9-12 months

His right to refuse treatment or monitoring will ultimately be the deciding factor in which health interventions are implemented

---

*When considering the public health risks associated with active tuberculosis, it is possible that the patient may not be permitted to refuse to comply with some treatment recommendations. Contact tracing will likely be implemented and daily observed therapy (DOT) will likely be necessary, even if he indicates that he will comply with ordered treatments.*

*Isolation may be necessary; however, it is unlikely to be necessary for 9 to 12 months.*

---

51.

Use the following scenario to answer this question.

Which of the following is MOST likely to have caused tracheomalacia?

(CHOOSE ONLY ONE.)

**Overinflation of the endotracheal tube cuff**

Misplacement of the endotracheal tube

Barotrauma caused during mechanical ventilation

The patient's underlying pathology

---

*Correct answer: Overinflation of the endotracheal tube cuff*

*Tracheomalacia is most likely to occur due to erosion of the trachea caused by pressure applied against the tracheal wall by an endotracheal tube cuff.*

*Misplacement of the endotracheal tube, barotrauma caused during mechanical ventilation, and the patient's underlying pathology are not likely causes of tracheomalacia.*

---

# CSE 3. Initiation and Modification of Interventions

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CSE 3. Initiation and Modification of Interventions

52.

Use the following scenario to answer this question.

Which of the following ventilator settings should be adjusted based on the patient's ABG results?

(CHOOSE ONLY ONE.)

**FIO<sub>2</sub>**

No adjustment is needed

V<sub>T</sub>

Mandatory rate

---

*Correct answer: FIO<sub>2</sub>*

*The patient's ABG shows mild hypoxia. This could potentially be corrected by increasing the PEEP; however, increasing the FIO<sub>2</sub> is a correct response.*

*Increasing the mandatory rate or V<sub>T</sub> would be unlikely to be effective.*

---

**53.**

Use the following scenario to answer this question.

Which of the following are MOST likely to be potential causes of COPD?

(SELECT AS MANY as you consider indicated.)

**Cigarette smoking**

**Alpha-1 antitrypsin deficiency**

Vaping

Exposure to asbestos

Having a history of pulmonary hypertension

---

*Cigarette smoking and alpha-1 antitrypsin deficiency are the two most common causes of COPD.*

*While vaping may exacerbate COPD, there is insufficient evidence to say that it actually causes COPD. Exposure to asbestos increases the risk of lung cancer, not COPD. Having a history of pulmonary hypertension does not significantly increase the risk of COPD.*

---

**54.**

Use the following scenario to answer this question.

Which of the following are NOT likely potential causes of the patient's pneumonia?

(SELECT AS MANY as you consider indicated.)

***Staphylococcus aureus***

***Mycodacterium tuberculosis***

***Pseudomonas aeruginosa***

*Sterptococcus pneumoniae*

*Haemophilus influenzae*

---

*Community-acquired pneumonia is likely to be caused by either Sterptococcus pneumoniae or Haemophilus influenzae.*

*Mycodacterium tuberculosis and Staphylococcus aureus are both typically causative organisms for hospital-acquired pneumonia. Pseudomonas aeruginosa is most commonly associated with ventilator-acquired pneumonia.*

---

**55.**

Use the following scenario to answer this question.

What factors should serve as the foundation for the healthcare team's decision to withdraw care while providing CPR?

(SELECT AS MANY as you consider indicated.)

**A request to stop CPR by the patient's designated decision maker**

**A signed DNR order on the patient's chart**

**Further care is determined to be futile**

A request to stop CPR by the patient's girlfriend

CPR has been provided for 40 minutes without return of circulation

---

*CPR should be discontinued by the healthcare team if further care is determined to be futile. It may also be discontinued at the request of the patient's designated decision maker or if a signed DNR is active.*

*A request to stop CPR by the patient's girlfriend would not be honored unless she is the patient's designated decision maker. The length of time CPR is performed may be an indicator of whether further care may be futile, but should not be the sole criterion on which the decision to discontinue care is made.*

---

**56.**

Use the following scenario to answer this question.

Which of the following interventions are NOT immediately indicated for this patient?

(SELECT AS MANY as you consider indicated.)

**EKG**

**Attempting to awaken the patient**

**Defibrillation**

Manual ventilation using a BVM

Chest compressions

---

*If the patient does not have a palpable pulse and has bradypnea that could be considered agonal breathing, then chest compressions and manual ventilation should be started.*

*Attempting to awaken the patient or performing an EKG are not correct interventions. Defibrillation is not indicated for pulseless electrical activity (PEA).*

---

**57.**

Use the following scenario to answer this question.

How long would treatment for this patient be anticipated to take?

(CHOOSE ONLY ONE.)

**6-9 months**

12-18 months

6-12 weeks

1-3 weeks

---

*Correct answer: 6-9 months*

*Treatment of drug-susceptible tuberculosis will typically take about six to nine months. If tuberculosis is drug-resistant, treatment can take much longer.*

---

**58.**

Use the following scenario to answer this question.

Which of the following recommendations are MOST appropriate for this patient?

(SELECT AS MANY as you consider indicated.)

**Intubating the patient**

**Transferring the patient to the ICU**

**Having a head CT ordered**

Increasing the oxygen to 6L per NC

Having the patient evaluated by a general surgeon

---

*The patient's declining respiratory status combined with symptoms that indicate septic shock is likely make intubating the patient and having them transferred to the ICU correct interventions. While it may be less likely that the patient's condition is related to a neurological process, neurological changes do still make a head CT appropriate.*

*Increasing the oxygen to 6L per NC is unlikely to adequately address the patient's change in respiratory function. Having the patient evaluated by a general surgeon is not relevant to their change in condition.*

---

**59.**

Use the following scenario to answer this question.

What is the BEST response when the patient says they are not sure if they can handle a diagnosis of obstructive sleep apnea?

(CHOOSE ONLY ONE.)

**"Are you considering killing yourself?"**

"What is causing you stress about it?"

"It won't be that bad getting it treated."

"Let me show you how easy treatment will be."

---

*Correct answer: "Are you considering killing yourself?"*

*The patient's statement, especially when combined with a history of suicidal ideation, may be taken to mean they are considering self harm. The patient should be asked directly to clarify their statement.*

*Other answers may be appropriate but are not best.*

---

60.

Use the following scenario to answer this question.

What is the advantage of a polysomnogram performed in a laboratory over a home sleep apnea test?

(CHOOSE ONLY ONE.)

**It allows for a higher degree of monitoring**

It better mimics natural conditions

It allows the technician the ability to control the patient's sleep cycle

There are no advantages to one particular type of sleep test

---

*Correct answer: It allows for a higher degree of monitoring*

*A polysomnogram performed in a sleep laboratory allows for a much higher degree of monitoring than a home sleep apnea test does.*

*A polysomnogram performed in a sleep laboratory is less natural than a test performed at home. A patient's sleep cycle can not be controlled by a technician, even in a laboratory setting.*

---

**61.**

Use the following scenario to answer this question.

Which of the following interventions are MOST likely to be indicated for this patient?

(SELECT AS MANY as you consider indicated.)

**Insertion of an arterial line**

**Lactic acid level**

**ABG**

Limiting IV fluids

Recommending administration of sildenafil

---

*The patient's changing condition is consistent with the development of septic shock. The interventions indicated for this suspected change in condition are insertion of an arterial line, checking a lactic acid level, and performing an ABG.*

*Limiting IV fluids or administering sildenafil are not appropriate interventions for suspected septic shock.*

---

62.

Use the following scenario to answer this question.

Which of the following definitions BEST describes a period of obstructive apnea during a laboratory-based sleep study?

(CHOOSE ONLY ONE.)

**The absence of airflow for at least 10 seconds**

A 80% or greater reduction in airflow for at least 10 seconds

A drop in O<sub>2</sub> saturation of 3% or more within a 10 second period

The absence of respiratory effort for at least 10 seconds

---

*Correct answer: The absence of airflow for at least 10 seconds*

*Apnea in the context of obstructive sleep apnea is defined as the absence of airflow for at least 10 seconds.*

*It is not described as the absence of respiratory effort for at least 10 seconds, as respiratory effort may be made but not result in airflow due to the obstruction. A reduction in airflow is described as hypopnea, not apnea. A drop in O<sub>2</sub> saturation is not used to define apnea.*

---

**63.**

Use the following scenario to answer this question.

While providing education to the patient, the respiratory therapist recommends the tennis ball technique. Which of the following is part of the tennis ball technique?

(CHOOSE ONLY ONE.)

**A tennis ball is sown into the patient's sleepwear**

The patient plays tennis at least three evenings a week

The patient places a tennis ball under their chin while sleeping

A tennis ball is held over the outlet of the CPAP to test its pressure prior to attaching the mask

---

*Correct answer: A tennis ball is sown into the patient's sleepwear*

*The tennis ball technique involves sewing a tennis ball into the patient's sleepwear. Depending on the placement of the tennis ball, the patient will adjust their sleeping positions to ensure their comfort while sleeping. This will help the patient maintain sleeping positions that promote airway patency.*

---

**64.**

Use the following scenario to answer this question.

Which of the following interventions is BEST given the patient's vital signs?

(CHOOSE ONLY ONE.)

**Providing 2L of oxygen via nasal cannula**

Applying a non-rebreather mask

Recommending IV fluids

Recommending IV antibiotics

---

*Correct answer: Providing 2L of oxygen via nasal cannula*

*The patient's vital signs indicate that there could be some mild dyspnea, and supplemental oxygen may be helpful. A non-rebreather, however, is not necessary.*

*IV fluids or IV antibiotics are not necessary based solely on the patient's vital signs.*

---

**65.**

Use the following scenario to answer this question.

Which of the following conditions BEST fits the patient's symptoms?

(CHOOSE ONLY ONE.)

**Tracheal stenosis**

Pneumonia

Pulmonary contusion

Acute asthma exacerbation

---

*Correct answer: Tracheal stenosis*

*Tracheal stenosis causes dyspnea, stridor, hypoxia, hypercapnia, and diminished breath sounds. This condition can also occur due to scarring of the trachea, which may have occurred secondary to the facial burns or, more likely, due to scarring caused by the recently discontinued tracheostomy.*

*Pneumonia is unlikely to cause bilateral breath sound changes or stridor. Pulmonary contusion does not fit the symptoms well, and there is no history of recent blunt chest trauma. An acute asthma exacerbation is unlikely when there is no previous history of asthma. While asthma may fit these symptoms, the background of a tracheostomy that was recently discontinued and the absence of a history of asthma makes tracheal stenosis more likely.*

---

**66.**

Use the following scenario to answer this question.

Which of the following medications are MOST likely to be used in treating the patient's tracheal stenosis?

(SELECT AS MANY as you consider indicated.)

**Bronchodilators**

**Aerosolized steroids**

Mucolytics

Aerosolized antimicrobials

Pulmonary vasodialotors

---

*Bronchodilators and aerosolized steroids will both decrease inflammation and increase the diameter of the tracheal lumen, potentially improving symptoms of tracheal stenosis.*

*Mucolytics, aerosolized antimicrobials, and pulmonary vasodilators are unlikely to have any meaningful effect in treating tracheal stenosis. Mucolytics may assist in airway clearance in some situations, but will not actually have a direct effect on tracheal stenosis.*

---

**67.**

Use the following scenario to answer this question.

Which of the following interventions should the respiratory therapist perform next?

(CHOOSE ONLY ONE.)

**Begin chest compressions**

Defibrillate the patient

Check for a pulse at another site

Prepare to intubate the patient

---

*Correct answer: Begin chest compressions*

*If the patient does not have a palpable pulse after 10 seconds of evaluation, chest compressions should be initiated.*

*Defibrillating the patient is not indicated unless they are in ventricular fibrillation or ventricular tachycardia. Further evaluation of the patient's pulse is not recommended if a pulse is not palpable. Intubating the patient is not the priority if they do not have a pulse.*

---

68.

Use the following scenario to answer this question.

When providing education to the patient regarding his discharge, which of the following should the respiratory therapist do?

(CHOOSE ONLY ONE.)

**Ask the patient his preferred learning method**

Rely on written materials to support retention of education

Use video to provide educational materials

Have the patient's son present while giving information to the patient

---

*Correct answer: Ask the patient his preferred learning method*

*Patients' learning preferences should be accommodated to ensure that patient education is most effective.*

*Relying on written materials to support retention of education is only appropriate if the patient prefers this method and once the patient's ability to read has been evaluated. The use of videos to provide educational materials is only best if this is the preferred learning method. The patient does not necessarily need to have family present while receiving discharge instructions.*

---

**69.**

Use the following scenario to answer this question.

Which of the following organisms are most likely to cause this patient's condition?

(SELECT AS MANY as you consider indicated.)

**Parainfluenza virus**

**Influenza virus**

**Respiratory syncytial virus**

*Sterptococcus pyrogenes*

*Haemophilus influenzae*

---

*Laryngotracheobronchitis, or croup, is caused by viruses. While parainfluenza virus is the most common cause of croup, it may also be caused by influenza virus and respiratory syncytial virus.*

*Bacterial infections may exacerbate croup; however, they do not cause it. *Sterptococcus pyrogenes* and *Haemophilus influenzae* are both bacterial organisms.*

---

**70.**

Use the following scenario to answer this question.

Which of the following would MOST likely indicate a poor prognosis for a patient with hypersensitivity pneumonitis?

(SELECT AS MANY as you consider indicated.)

**Fibrosis on a CT scan**

**Chronic hypersensitivity pneumonitis**

Acute hypersensitivity pneumonitis

Hypersensitivity pneumonitis caused by animal proteins

Bilateral lung involvement

---

*Fibrosis on a CT scan and hypersensitivity pneumonitis that is chronic both result in shorter survival.*

*Hypersensitivity pneumonitis almost always involves both lungs. Acute hypersensitivity pneumonitis is not associated with shorter survival rates when compared to chronic hypersensitivity pneumonitis. The causative factor of hypersensitivity pneumonitis does not play a significant role in influencing survival.*

---

71.

Use the following scenario to answer this question.

Which of the following should the respiratory therapist address when providing discharge instructions to the patient?

(SELECT AS MANY as you consider indicated.)

**How to recognize exacerbation of symptoms**

**The need to continue prescribed treatments for preexisting medical conditions**

When to contact his son for help

The need to eliminate the presence of pets in his residence

The need to move to a residence that does not require stairs to access

---

*The patient must be able to recognize exacerbation of symptoms and know when to seek care. The patient should also understand his need to continue prescribed treatments for preexisting medical conditions in addition to any new treatments.*

*The patient should be instructed to reach out to healthcare providers, not his son, if he needs medical assistance. The patient's condition does not require eliminating the presence of pets in his residence or moving to a residence that can be accessed without using stairs.*

---

**72.**

Use the following scenario to answer this question.

Which diagnostic interventions are MOST likely to reveal the cause of this patient's symptoms?

(SELECT AS MANY as you consider indicated.)

**Bronchoscopy**

**CT scan**

Cardiac ultrasound

EKG

Uric acid level

---

*The patient's symptoms indicate a potential upper airway obstruction, with tracheal stenosis being the most likely explanation. A bronchoscopy and a CT scan would both be likely to reveal tracheal stenosis or other causes of upper airway obstruction.*

*A cardiac ultrasound, EKG, or uric acid level would not provide any data on the patency of the upper airways.*

---

**73.**

Use the following scenario to answer this question.

Which of the following procedures is MOST likely to have been performed on this patient to treat tracheal stenosis?

(CHOOSE ONLY ONE.)

**Tracheal stent placement**

Tracheal resection and reconstruction

Replacement of the tracheostomy

Intubation with ventilator settings that include a PEEP > 15 cm H<sub>2</sub>O

---

*Correct answer: Tracheal stent placement*

*Tracheal stent placement is the most common procedure used to treat tracheal stenosis.*

*While tracheal resection and reconstruction is another procedure that may be used, it generally is only used when tracheal stenting is ineffective. Replacement of the tracheostomy would not correct the tracheal stenosis if tracheostomy scarring initially caused it and is not the best procedure for this patient. Intubation with ventilator settings that include a PEEP > 15 cm H<sub>2</sub>O will not correct tracheal stenosis.*

---

**74.**

Use the following scenario to answer this question.

Which of the following treatment options is the MOST extreme treatment option used to treat hypersensitivity pneumonitis?

(CHOOSE ONLY ONE.)

**Lung transplantation**

Chronic steroid therapy

Routine bronchoalveolar lavages

Tracheal stenting

---

*Correct answer: Lung transplantation*

*In extreme situations, lung transplantation may be necessary for chronic, progressive hypersensitivity pneumonitis. This treatment option is typically only considered when all other possible treatments have been exhausted.*

*Chronic steroid therapy may be a less extreme treatment option for hypersensitivity pneumonitis. Tracheal stenting will not be a treatment option for hypersensitivity pneumonitis. A bronchoalveolar lavage is generally diagnostic, not therapeutic.*

---

**75.**

Use the following scenario to answer this question.

Which of the following interventions is MOST important for this patient?

(CHOOSE ONLY ONE.)

**Beginning oxygen therapy**

Performing a chest X-ray

Ensuring antibiotics are administered

Performing chest percussion

---

*Correct answer: Beginning oxygen therapy*

*Beginning oxygen therapy is the most important intervention for this patient as their oxygen saturation is well below the normal range. The patient's hypoxia should be treated before any other interventions are performed.*

*While antibiotics are indicated for this patient, they are less immediately important than the treatment of hypoxia.*

---

**76.**

Use the following scenario to answer this question.

Which of the following can be inferred from the finding of consolidations on the chest X-ray?

(CHOOSE ONLY ONE.)

**The community-acquired pneumonia is caused by bacteria**

The community-acquired pneumonia is caused by a virus

The community-acquired pneumonia is caused by inhalational anthrax

The community-acquired pneumonia is caused by fungi

---

*Correct answer: The community-acquired pneumonia is caused by bacteria*

*Lobar consolidation is indicative of bacterial pneumonia. Pleural effusions, interstitial infiltrates, or cavities could indicate other potential causes; however, lobar consolidation is primarily associated with bacterial pneumonia.*

---

77.

Use the following scenario to answer this question.

Which of the following questions is BEST for the respiratory therapist to ask the patient next?

(CHOOSE ONLY ONE.)

**"Have you been losing weight or waking up sweating during the night?"**

"Have you recently taken up smoking?"

"Does the asthma that you used to have still bother you sometimes?"

"Have you developed any kind of rash or do you experience periods of confusion?"

---

*Correct answer: "Have you been losing weight or waking up sweating during the night?"*

*The patient's symptoms could be indicative of tuberculosis. Losing weight or waking up sweating during the night are also symptoms of tuberculosis that should be tested for.*

*The other questions do not provide any deeper insight into the possibility of tuberculosis.*

---

78.

Use the following scenario to answer this question.

Which of the following is CORRECT regarding how treatment should be provided for this patient?

(CHOOSE ONLY ONE.)

**Daily observed therapy should be part of this patient's treatment program**

Weekly observed therapy should be part of this patient's treatment program

Monthly observed therapy should be part of this patient's treatment program

Observed therapy does not need to be part of this patient's treatment program

---

*Correct answer: Daily observed therapy should be part of this patient's treatment program*

*Daily observed therapy should be part of the treatment program of anyone who is diagnosed with active tuberculosis. This will help to ensure public safety by ensuring compliance with recommended treatments. A commitment by the patient to comply with treatment is not a replacement for daily observed therapy.*

---

79.

Use the following scenario to answer this question.

Which of the following BEST describes the difference between apnea and hypopnea?

(CHOOSE ONLY ONE.)

**Apnea is the complete absence of airflow, while hypopnea is reduced airflow**

Apnea is the complete absence of respiratory effort, while hypopnea is insufficient respiratory effort

Apnea and hypopnea are used interchangeably

Apnea is a reduction of O<sub>2</sub> saturation of at least 5%, while hypopnea is a reduction of O<sub>2</sub> saturation of 1% to 5%

---

*Correct answer: Apnea is the complete absence of airflow, while hypopnea is reduced airflow*

*Apnea and hypopnea both refer to airflow. Apnea is the complete absence of airflow, while hypopnea is reduced airflow. Respiratory effort that does not overcome an obstruction is still considered apnea.*

---

**80.**

Use the following scenario to answer this question.

Which of the following symptoms should be assessed for if obstructive sleep apnea (OSA) is suspected?

(SELECT AS MANY as you consider indicated.)

**Morning headaches**

**Nocturia**

**Snoring while sleeping**

Insomnia

Caffeine intolerance

---

*Symptoms of obstructive sleep apnea (OSA) may include morning headaches, nocturia, and snoring while sleeping.*

*Insomnia is unlikely to be present, as fatigue is normally associated with OSA. Increased caffeine use may occur in patients with OSA; however, caffeine intolerance is not typically a problem specifically associated with OSA.*

---

81.

Use the following scenario to answer this question.

Which of the following are CORRECT when using CPAP or BiPAP to treat obstructive sleep apnea?

(SELECT AS MANY as you consider indicated.)

**There is no significant advantage shown to using BiPAP over CPAP**

**There is no significant advantage shown to using CPAP over BiPAP**

**CPAP settings should be titrated in a laboratory setting to eliminate apnea**

**BiPAP settings should be titrated in a laboratory setting to eliminate apnea**

BiPAP is less likely to be tolerated than CPAP by most patients

---

*There is no significant advantage shown to using either BiPAP or CPAP for treating obstructive sleep apnea (OSA) when they are compared to each other. CPAP and BiPAP settings should both be titrated in a laboratory setting to eliminate apnea. Each patient's tolerance for CPAP or BiPAP will be different, and it is incorrect to say that BiPAP is less likely to be tolerated than CPAP by most patients.*

---

**82.**

Use the following scenario to answer this question.

Which of the following questions by the respiratory therapist has the potential to change the next interventions that the healthcare team should implement?

(CHOOSE ONLY ONE.)

**"Does anyone else feel a pulse?"**

"When was his last fainting spell?"

"What is his O2 sat?"

"Is the crash cart here?"

---

*Correct answer: "Does anyone else feel a pulse?"*

*If another member of the healthcare team does feel a pulse, it indicates that chest compressions are not necessary.*

*Potential answers to the other questions will not change whether chest compressions should be the next intervention by the healthcare team.*

---

83.

Use the following scenario to answer this question.

How should the respiratory therapist anticipate adjusting the patient's oxygen based on the change in the patient's condition?

(CHOOSE ONLY ONE.)

**The patient's oxygen does not require any change**

The patient's oxygen should be discontinued and they should be back on room air

The patient should be started on a non-rebreather

The patient should be started on BIPAP with an FIO<sub>2</sub> of 35%

---

*Correct answer: The patient's oxygen does not require any change*

*Permissive hypoxia is recommended for patients with COPD to avoid reducing the patient's hypoxic drive. An oxygen saturation of 92% is ideal for this patient and no change is necessary.*

*The oxygen could be titrated down or discontinued; however, this is not necessary and will not likely be performed until the patient is more stable. The patient will not require a non-rebreather or BIPAP.*

---

**84.**

Use the following scenario to answer this question.

Which of the following would the respiratory therapist anticipate that the ABG will show?

(SELECT AS MANY as you consider indicated.)

**Respiratory acidosis**

**Hypoxia**

Metabolic acidosis

Respiratory alkalosis

A compensated acid-base imbalance

---

*Uncompensated respiratory acidosis and hypoxia caused by limited airflow through the trachea are most likely to result from severe laryngotracheobronchitis (croup).*

*It is very unlikely that the respiratory acidosis will be compensated or that the acid-base imbalance will have other causes.*

---

**85.**

Use the following scenario to answer this question.

Which of the following does the ABG indicate?

(SELECT AS MANY as you consider indicated.)

**Acidosis**

**Respiratory origin of pH imbalance**

Hypoxia

Alkalosis

Metabolic origin of pH imbalance

---

*The ABG results indicate uncompensated respiratory acidosis; this can be determined by the abnormally low pH, indicating uncompensated acidosis, and the elevated pCO<sub>2</sub> coupled with a normal HCO<sub>3</sub><sup>-</sup>, indicating that the imbalance has a respiratory cause.*

*The patient's pO<sub>2</sub> is 60 mmHg, which is the low end of normal.*

---

**86.**

Use the following scenario to answer this question.

Which of the following BEST describes the results of the patient's ABG?

(CHOOSE ONLY ONE.)

**Narrowing of the tracheal lumen is affecting ventilation**

Worsening congestive heart failure is affecting diffusion

A gout exacerbation is affecting the affinity of hemoglobin for oxygen

A metabolic imbalance is affecting how the acid-base balance is maintained

---

*Correct answer: Narrowing of the tracheal lumen is affecting ventilation*

*Decreased ventilation is indicated not only by the ABG, but also by the wheezing, stridor, and diminished breath sounds. Decreased ventilation is a good explanation for hypercarbia and hypoxia.*

*While decreased circulation or diffusion could, in theory, cause the ABG results, there are no indicators that congestive heart failure is affecting diffusion. Gout does not affect the affinity of hemoglobin for oxygen. The patient has respiratory acidosis, not a metabolic acidosis.*

---

**87.**

Use the following scenario to answer this question.

Which of the following can be determined about this patient?

(CHOOSE ONLY ONE.)

**It is inconclusive if he has tuberculosis or not**

He has active tuberculosis

He has dormant tuberculosis

He does not have tuberculosis

---

*Correct answer: It is inconclusive if he has tuberculosis or not*

*The chest x-ray is consistent with tuberculosis; however, it is not conclusive.*

*A positive PPD test does indicate that tuberculosis is present; however, a negative test does not rule it out. It may take 3-8 weeks after infection for a PPD test to be positive.*

---

88.

Use the following scenario to answer this question.

Which of the following conditions would the patient need to have for their suspected obstructive sleep apnea to be considered overlap syndrome?

(CHOOSE ONLY ONE.)

**COPD**

Hypertension

Narcolepsy

Congenital structural upper airway defects

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*Correct answer: COPD*

*Patients who have both chronic obstructive pulmonary disorder (COPD) and obstructive sleep apnea (OSA) are considered to have overlap syndrome. Overlap syndrome is associated with decreased survival and an increased rate of complications.*

---

**89.**

Use the following scenario to answer this question.

Which of the following tests is MOST important to recommend for this patient?

(CHOOSE ONLY ONE.)

**A chest CT with contrast**

A d-dimer level

A troponin I level

A chest CT without contrast

---

*Correct answer: A chest CT with contrast*

*The patient's symptoms are most consistent with a pulmonary embolism, which can be best diagnosed with a chest CT with contrast. The contrast allows for evaluation of the pulmonary vasculature.*

*A troponin I level would be helpful in diagnosing an MI and should be performed; however, it is more likely that the symptoms are caused by a pulmonary embolism, making a chest CT with contrast more important. A d-dimer level may be indicated, but is less likely to provide useful information than the chest CT with contrast.*

---

90.

Use the following scenario to answer this question.

Which of the following BEST explains the patient's symptoms?

(CHOOSE ONLY ONE.)

**Pneumonia**

Tuberculosis

Pulmonary edema

Pulmonary embolism

---

*Correct answer: Pneumonia*

*The unilateral nature of breath sound changes coupled with an elevated temperature and low O<sub>2</sub> saturation makes pneumonia the most likely explanation of this patient's symptoms.*

*Pulmonary embolism may also fit many of these symptoms but is unlikely to cause significant lung sound changes.*

---

91.

Use the following scenario to answer this question.

Once the patient begins treatment, which of the following existing medications are MOST likely to require adjustments?

(CHOOSE ONLY ONE.)

**Antihypertensives**

Anxiolytics

Antidepressants

Antihyperlipidemics

---

*Correct answer: Antihypertensives*

*As obstructive sleep apnea is corrected, the patient's blood pressure may begin to correct. Antihypertensive medications may then result in hypotension. For this reason, it is important to monitor blood pressure changes as treatment progresses, and antihypertensive medications should be adjusted.*

---

**92.**

Use the following scenario to answer this question.

Which of the following interventions should ideally be performed prior to intubation because they may affect ventilator settings?

(SELECT AS MANY as you consider indicated.)

**ABG**

**Chest X-ray**

Lactic acid

Carboxyhemoglobin levels

CBC

---

*Ventilator settings will be affected by ABG results and by if the patient is in ARDS or not. ABG and a chest X-ray will help determine if the patient is in ARDS.*

*Lactic acid and CBC may be helpful clinically, however, they are not likely to affect ventilator settings. Carboxyhemoglobin levels are not clinically relevant for this patient.*

---

**93.**

Use the following scenario to answer this question.

Which of the following questions are included on the STOP-BANG questionnaire?

(SELECT AS MANY as you consider indicated.)

**Is the patient's age greater than 50?**

**Does the patient often feel tired, sleepy, or fatigued during the daytime?**

**Is the patient's neck circumference greater than 40 cm?**

Is the patient's BMI greater than 25?

Does the patient have or are they being treated for hypotension?

---

Questions included on the STOP-BANG questionnaire include (paraphrased):

- **S:** Does the patient **S**nore loudly?
  - **T:** Does the patient often feel **T**ired, sleepy, or fatigued during the daytime?
  - **O:** Has anyone **O**bserved the patient stop breathing while asleep?
  - **P:** Does the patient have or are they being treated for high blood **P**ressure?
  - **B:** Is the patient's **B**MI greater than 35?
  - **A:** Is the patient's **A**ge greater than 50?
  - **N:** Is the patient's **N**eck circumference greater than 40 cm?
  - **G:** Is the patient's **G**ender male?
-

**94.**

Use the following scenario to answer this question.

Which of the following risk factors makes a diagnosis of tracheal stenosis MOST likely?

(CHOOSE ONLY ONE.)

**Recent tracheostomy**

History of gout

History of MI

History of congestive heart failure

---

*Correct answer: Recent tracheostomy*

*Tracheal stenosis is often caused by scar tissue that narrows the tracheal lumen. A recent tracheostomy and recent facial burns both have the potential to cause scarring or inflammation, while a history of MI, CHF, and gout do not.*

---

95.

Use the following scenario to answer this question.

Is reporting necessary for patients diagnosed with tuberculosis?

(CHOOSE ONLY ONE.)

**Yes, all cases should be reported to the local department of public health**

No, never

Yes, cases should be reported to the local department of public health, but only if the patient is at a high risk for not completing treatments

Yes, cases should be reported to the local department of public health, but only if the patient is at a high risk for transmitting the disease

---

*Correct answer: Yes, all cases should be reported to the local department of public health*

*All cases should be reported to the local department of public health so that contact tracing can be initiated and to prevent further spread of the disease. Reporting should not be limited to certain groups of patients.*

---

**96.**

Use the following scenario to answer this question.

Which part of the patient's history is likely to be MOST relevant to her diagnosis?

(CHOOSE ONLY ONE.)

**Hypertension**

Asthma

Suicidal ideation

Age and gender

---

*Correct answer: Hypertension*

*Hypertension that seems to be idiopathic is a common hallmark of obstructive sleep apnea (OSA).*

*Childhood asthma is not typically associated with an increased risk of OSA as an adult. Suicidal ideation is not associated with an increased risk of OSA. Male gender, not female gender, is associated with an increased risk of OSA.*

---

97.

Use the following scenario to answer this question.

Which of the following BEST describes the indication for inhaled antibiotics in a patient who has pneumonia?

(CHOOSE ONLY ONE.)

**They are used as treatment adjuncts for multi-drug resistant gram-negative infections**

They are used as treatment adjuncts for any kind of respiratory infection

They are a primary treatment option with many different forms of respiratory infections

They are contraindicated except for in patients with active tuberculosis

---

*Correct answer: They are used as treatment adjuncts for multi-drug resistant gram-negative infections*

*Inhaled antibiotics are used as adjunctive treatments for multi-drug resistant gram-negative infections.*

*They are not routinely used as a primary treatment option and are not typically used for any kind of respiratory infection.*

---

**98.**

Use the following scenario to answer this question.

Which of the following vital sign changes would the respiratory therapist expect to see if the patient had hypersensitivity pneumonitis?

(SELECT AS MANY as you consider indicated.)

**Elevated heart rate**

**Elevated temperature**

**Elevated respiratory rate**

Elevated blood pressure

Elevated O<sub>2</sub> saturation

---

*Vital sign changes caused by hypersensitivity pneumonitis would primarily be related to the presence of an interstitial inflammatory process. This would result in an elevated heart rate, temperature, and respiratory rate.*

*Elevated blood pressure may or may not occur. A decreased O<sub>2</sub> saturation, not an elevated O<sub>2</sub> saturation, would be expected.*

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**99.**

Use the following scenario to answer this question.

Which of the following are goals of treating obstructive sleep apnea (OSA)?

(SELECT AS MANY as you consider indicated.)

**Normalizing O2 saturation and ventilation**

**Eliminating hypopnea**

**Improving sleep architecture and community**

**Eliminating snoring**

Reducing episodes of apnea

---

*The goals of treating obstructive sleep apnea (OSA) include eliminating snoring, apnea, and hypopnea; normalizing O2 saturation and ventilation; and improving sleep architecture and community.*

---

**100.**

Use the following scenario to answer this question.

Which of the following is/are MOST likely to improve this patient's condition?

(SELECT AS MANY as you consider indicated.)

**Racemic epinephrine**

**Corticosteroids**

**Heliox**

Dornase alfa

Acetylcysteine

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*Laryngotracheobronchitis, or croup, is caused by inflammation of subglottic tissues. Racemic epinephrine, corticosteroids, and Heliox all reduce airway resistance and offer some relief from croup.*

*Dornase alfa and acetylcysteine are mucolytics and do not improve the inflammation that causes croup,*

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