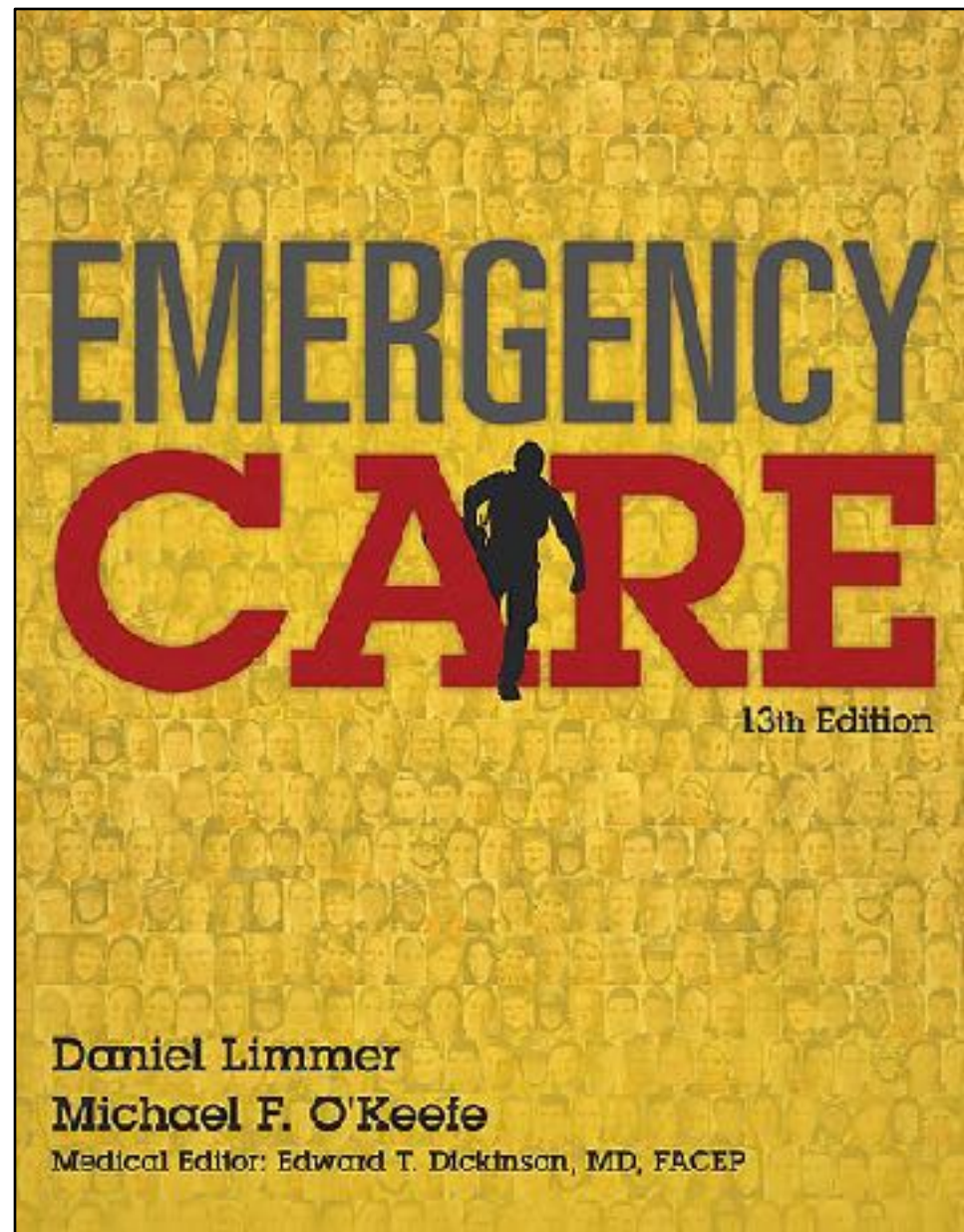


Emergency Care

THIRTEENTH EDITION



CHAPTER

17

Respiratory Emergencies & Airway Management

WHY DON'T WE USE AN NASAL PHARYNGEAL AIRWAY IN A PATIENT THAT MIGHT HAVE A SUSPECTED BASAL SKULL FRACTURE?



WHEN IS IT INAPPROPRIATE TO USE AN ORAL PHARYNGEAL AIRWAY?



WHAT IS THE NORMAL BREATHS
PER MINUTE FOR AN ADULT?

12 to 20

WHEN IS A JAW-THRUST MANEUVER INDICATED?

Trauma to the Head, Neck, Spine



WHAT ARE THE TWO TYPES OF PHARYNGEAL AIRWAYS?

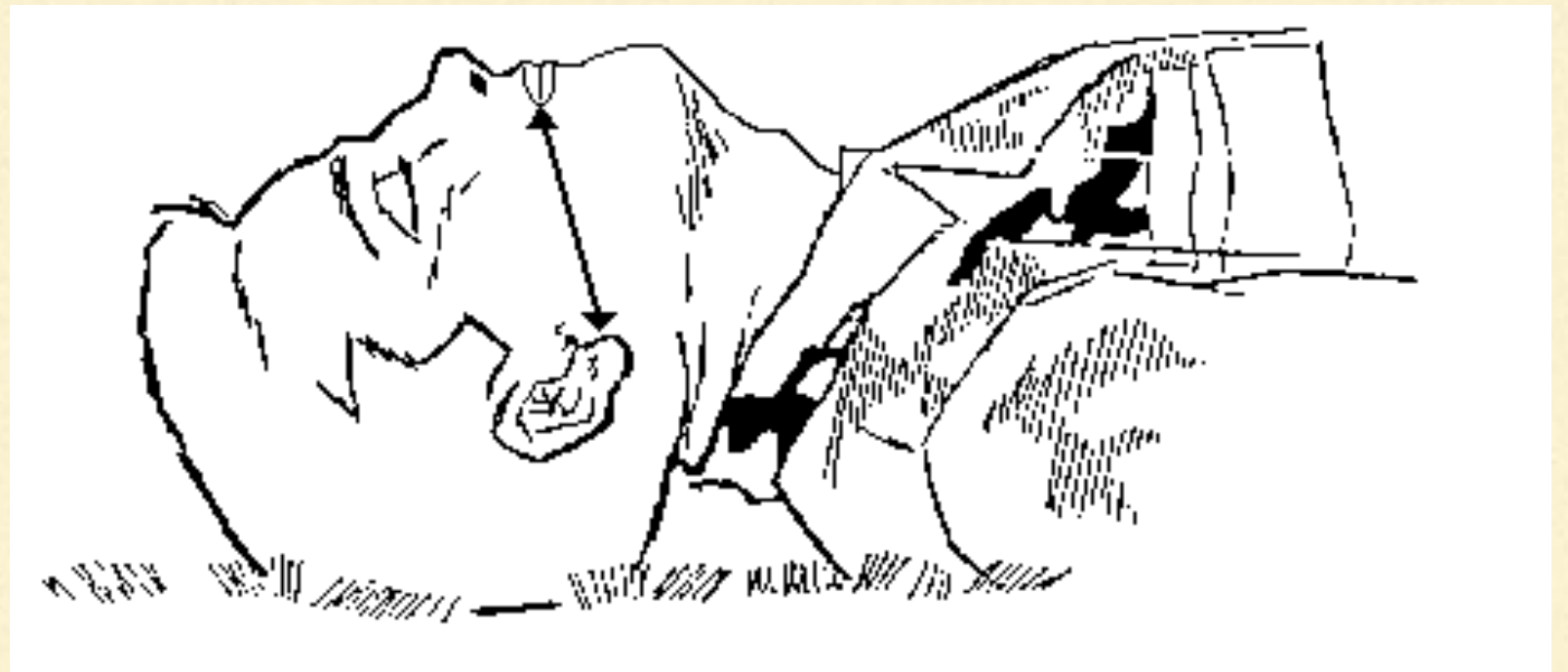
- Oral



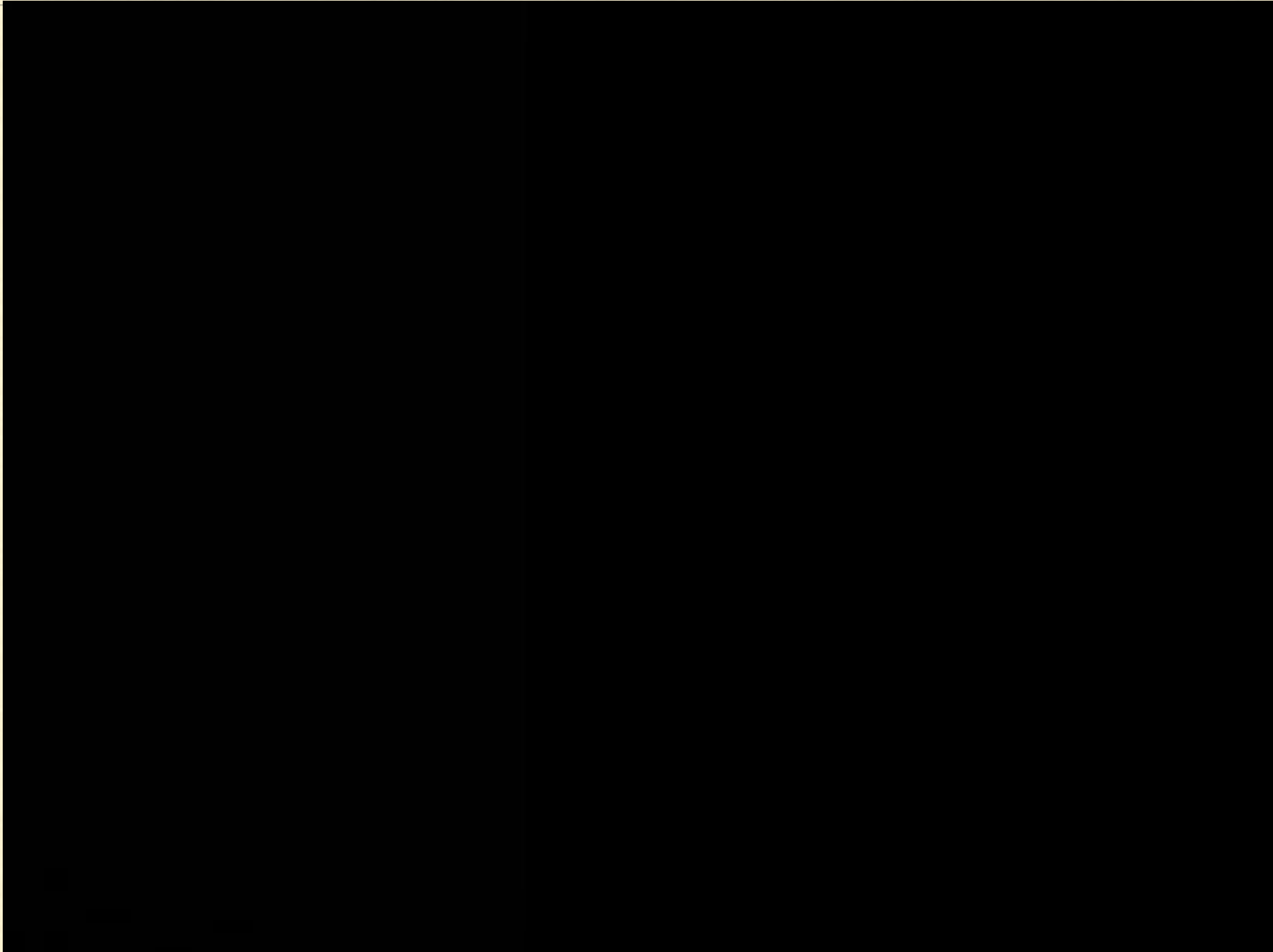
- Nasal



HOW DO YOU CHOOSE THE CORRECT SIZE FOR AN ORAL PHARYNGEAL AIRWAY?



WHAT IS THE CORRECT WAY TO INSERT
AN ORAL PHARYNGEAL AIRWAY?



WHAT IS THE CORRECT WAY TO INSERT A NASAL PHARYNGEAL AIRWAY?



A KING TUBE IS CLASSIFIED AS WHAT TYPE OF AIRWAY?

- Supraglottic Airway



WHAT IS AUSCULTATION, HOW IS IT DONE, AND WHAT CAN WE LEARN FROM DOING IT?



WHAT IS PERCUSSION, HOW IS IT DONE, AND WHAT CAN WE LEARN FROM DOING IT?



	PNEUMONIA	PNEUMOTHORAX	PLEURAL EFFUSION	COPD
HISTORY / INSPECTION	Cough, sputum production, fever.	Dyspnoea, chest pain, Hx of trauma. ↑JVP in tension.	Dyspnoea , mild non-productive cough, chest pain.	Chronic smoking, repeated chest infections, dyspnoea, cough.
PALPATION	<ul style="list-style-type: none"> • ↑Tactile fremitus • ↓chest expansion - unilateral 	<ul style="list-style-type: none"> • ↓Tactile fremitus • Tracheal deviation if tension (away from affected side) • ↓chest expansion - unilateral 	<ul style="list-style-type: none"> • ↓Tactile fremitus • Tracheal deviation (away from affected side) if >1000ml 	<ul style="list-style-type: none"> • ↓chest expansion bilaterally
PERCUSSION	Dull	Hyper-resonant	Stony Dull	Hyper-resonant
AUSCULTATION	<ul style="list-style-type: none"> • Bronchial Breathing • Added sounds: crackles and wheeze • ↑Vocal resonance (whispering pectoriloquy) 	<ul style="list-style-type: none"> • ↓, vesicular breath sounds • Added sounds 	<ul style="list-style-type: none"> • ↓, vesicular breath sounds • Crackles at the upper edge of the effusion • Pleural friction rub • Muffled vocal resonance 	<ul style="list-style-type: none"> • ↓, vesicular breath sounds • Added sounds: wheeze, crackles

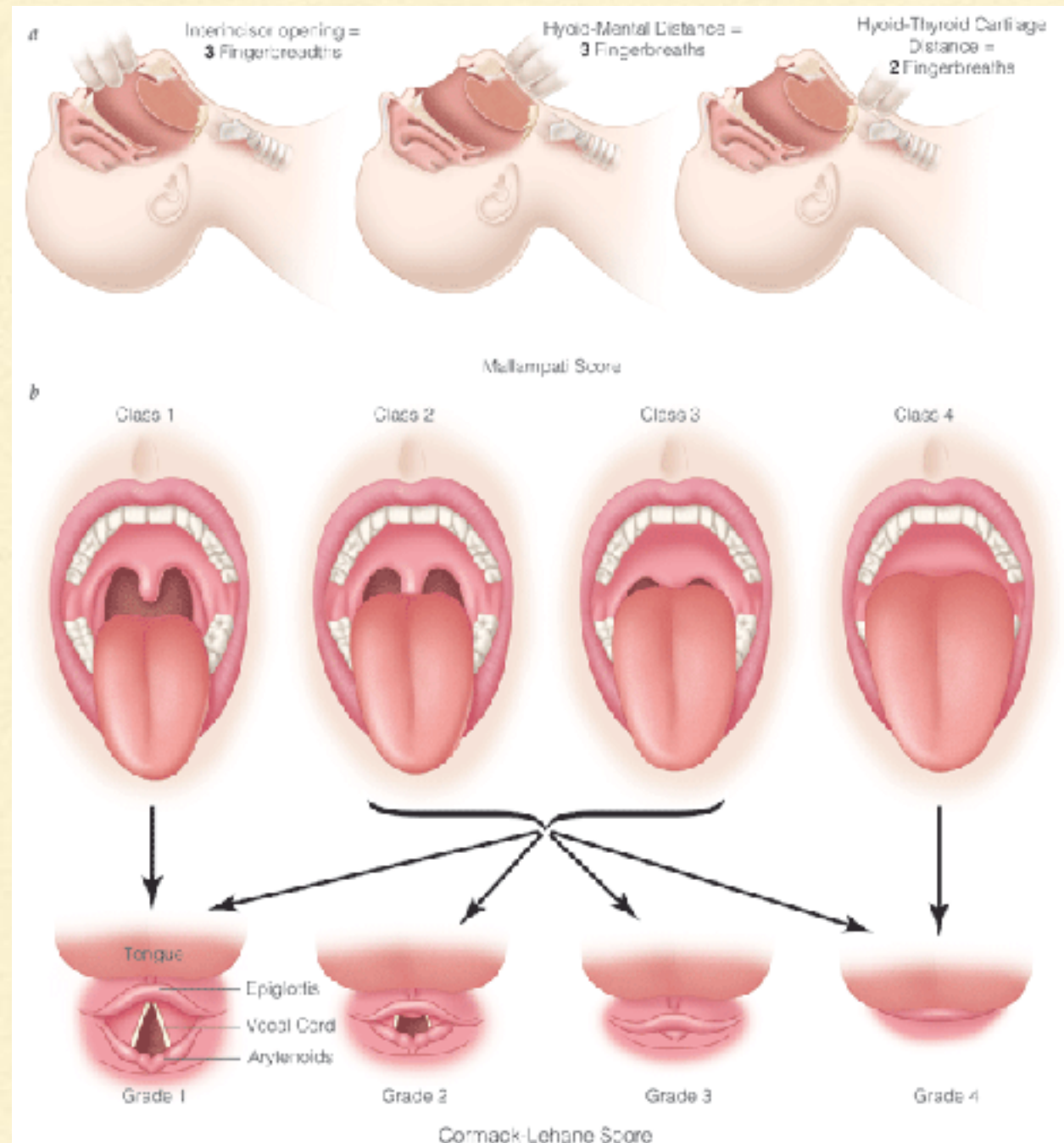
WHAT DRUGS CAN BE PUT DOWN AND ET TUBE, AND HOW IS IT DONE?

NAVEL

WHAT IS THE PURPOSE OF ORAL INTUBATION?

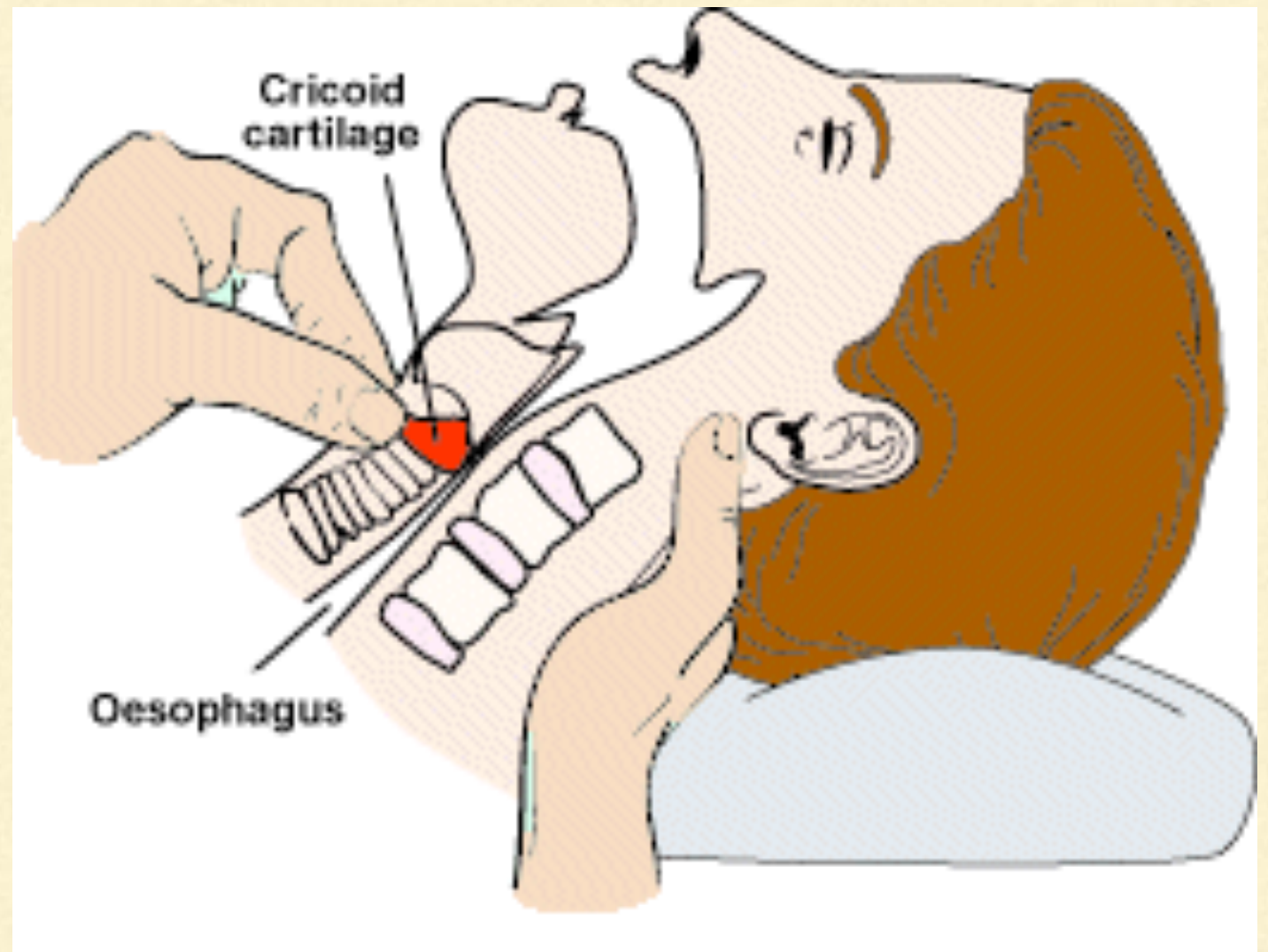
To protect the patient's airway!

WHAT FACTORS CAN MAKE CONTROLLING AND AIRWAY DIFFICULT?



WHAT IS THE SNIFFING POSITION AND WHEN IS IT INAPPROPRIATE TO USE IT?

- Do not use with head, neck, or spinal injury



HOW DO YOU CONFIRM THE PROPER PLACEMENT OF A KING TUBE OR AND ENDOTRACHEAL TUBE (IN ORDER OF IMPORTANCE)?

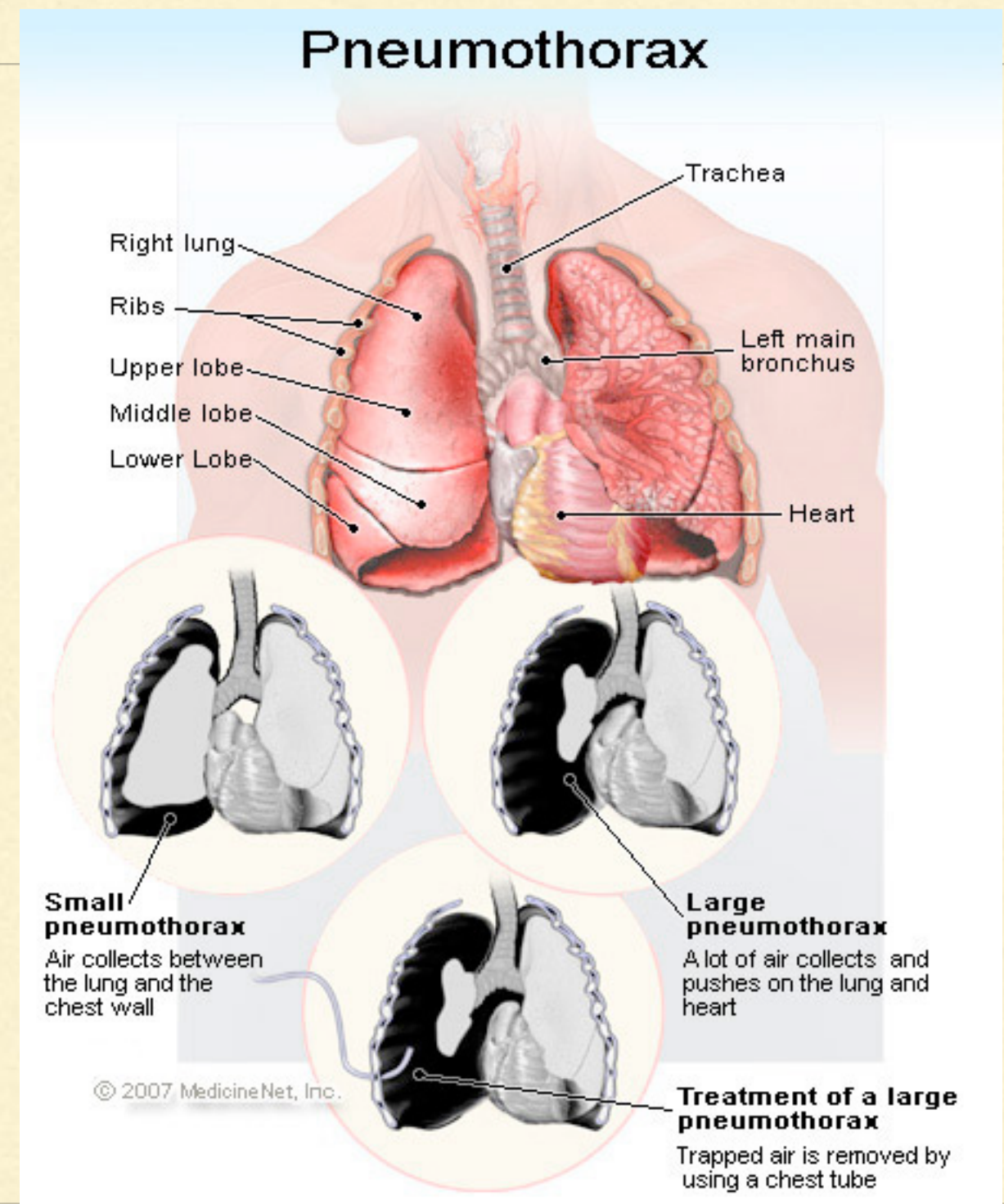
- Visualization of the tube going through the vocal cords
- Chest rise and fall
- Breath sounds heard during lung auscultation, absent in stomach
- Misting on the tube
- CO2 detection devices
- Esophageal detector devices
- Pulse oximetry



WHAT IS A TENSION PNEUMOTHORAX AND WHAT ARE THE SIGNS AND SYMPTOMS?

■ Signs & Symptoms:

- Chest pain that usually has a sudden onset.
- Tightness in the chest.
- Shortness of breath.
- Rapid heart rate.
- Rapid breathing.
- Coughing.
- Fatigue.
- Cyanosis.
- Decrease breath sounds.
- Decreased O2 saturation.
- Hyperresonant sound on affected side.
- JVD
- Tracheal Deviation



WHAT IS SUBCUTANEOUS EMPHYSEMA AND HOW DO YOU DETECT IT?

- Subcutaneous emphysema is when gas or air is in the layer under the skin.
- Sounds like rice crispies.



HOW DO YOU TREAT A SUCKING CHEST WOUND?

- Occlusive Dressing over the hole.

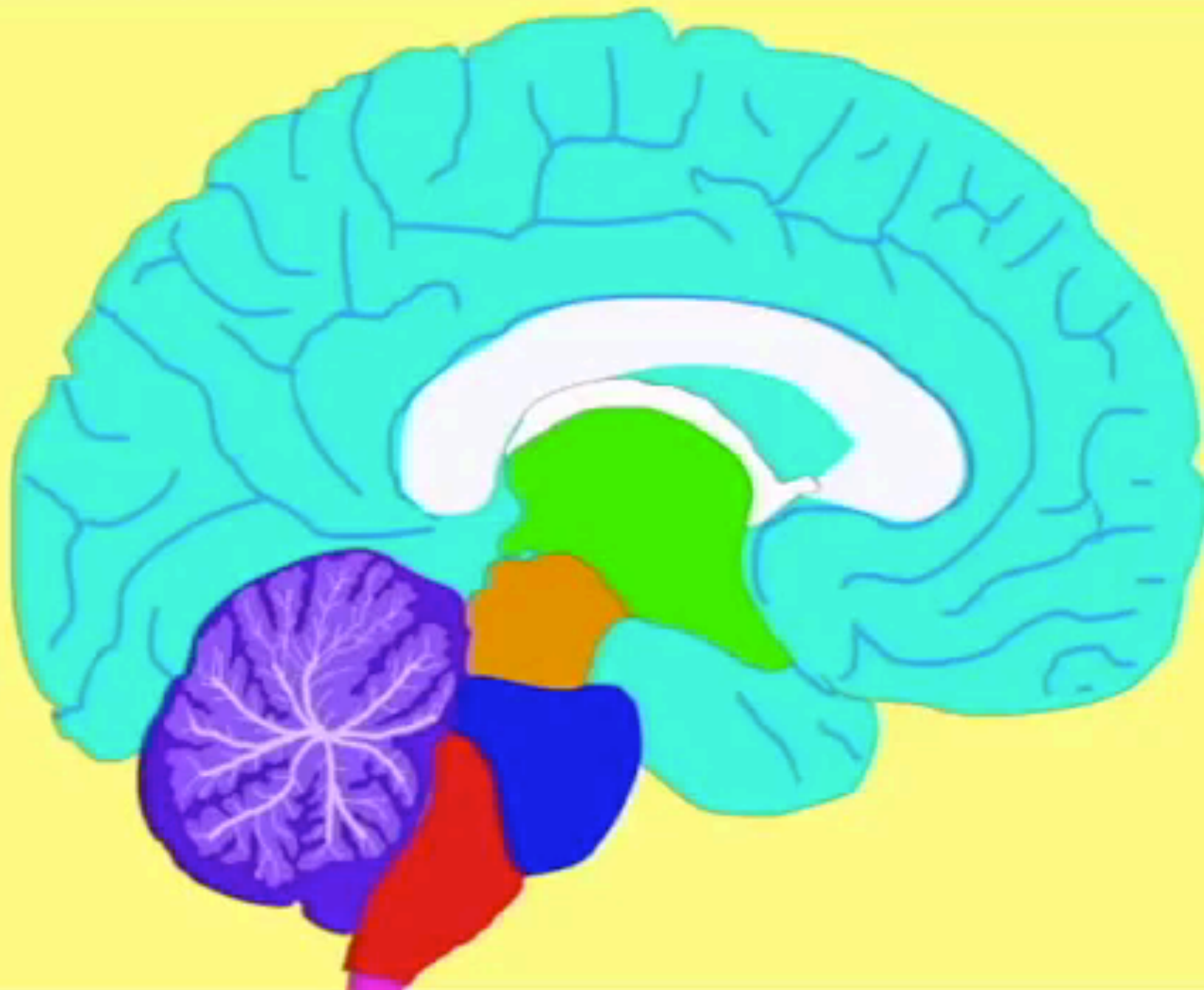


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WHAT IS THE DIFFERENCE BETWEEN VENTILATION AND INTERNAL AND EXTERNAL RESPIRATION?

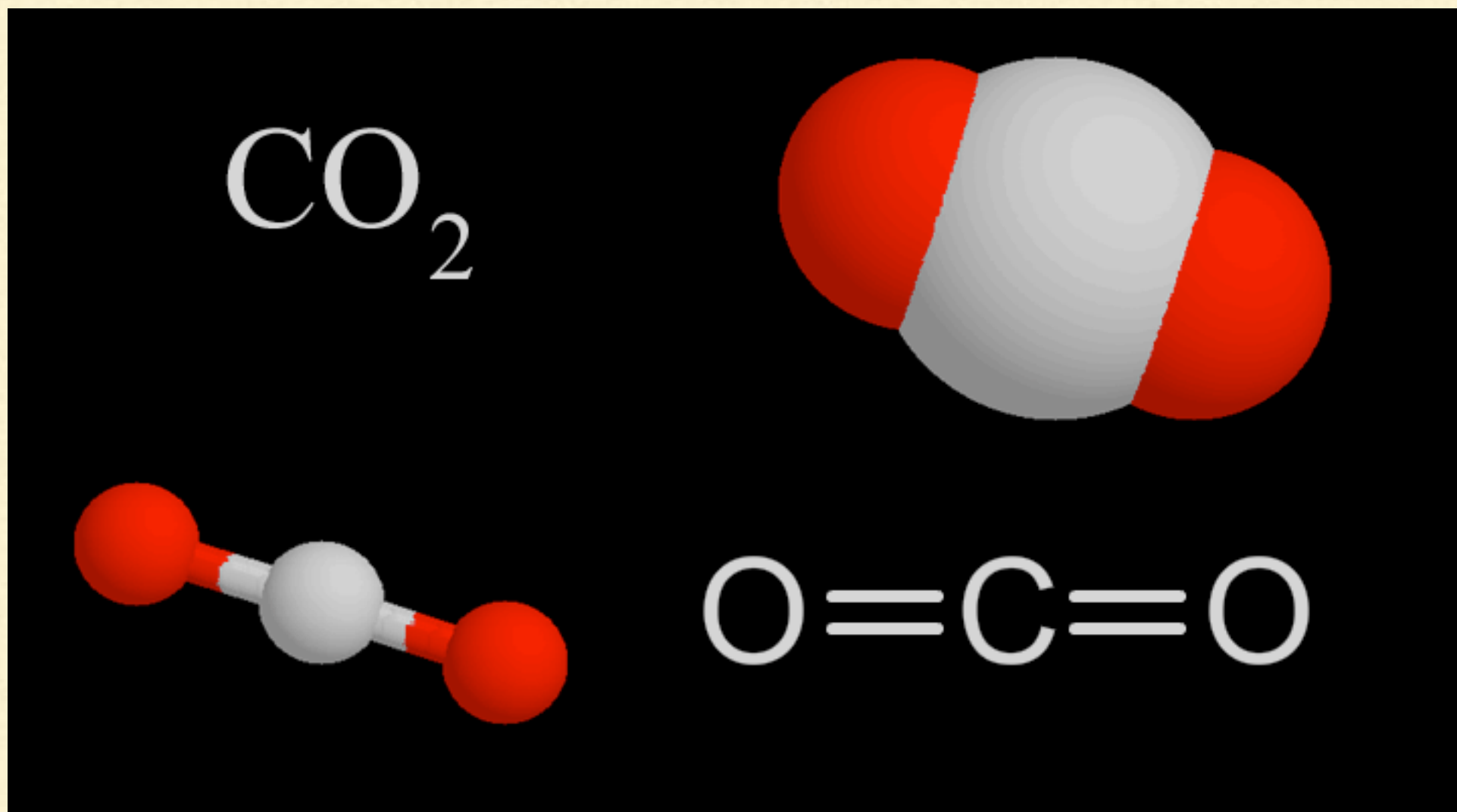
- Ventilation - The movement of air between the lungs and the external environment.
 - External respiration: exchange of oxygen and carbon dioxide between air and blood.
 - Internal respiration: exchange of gases oxygen and carbon dioxide between blood and tissue fluid.
-

WHERE IS THE RESPIRATORY CENTERS OF THE BRAIN?

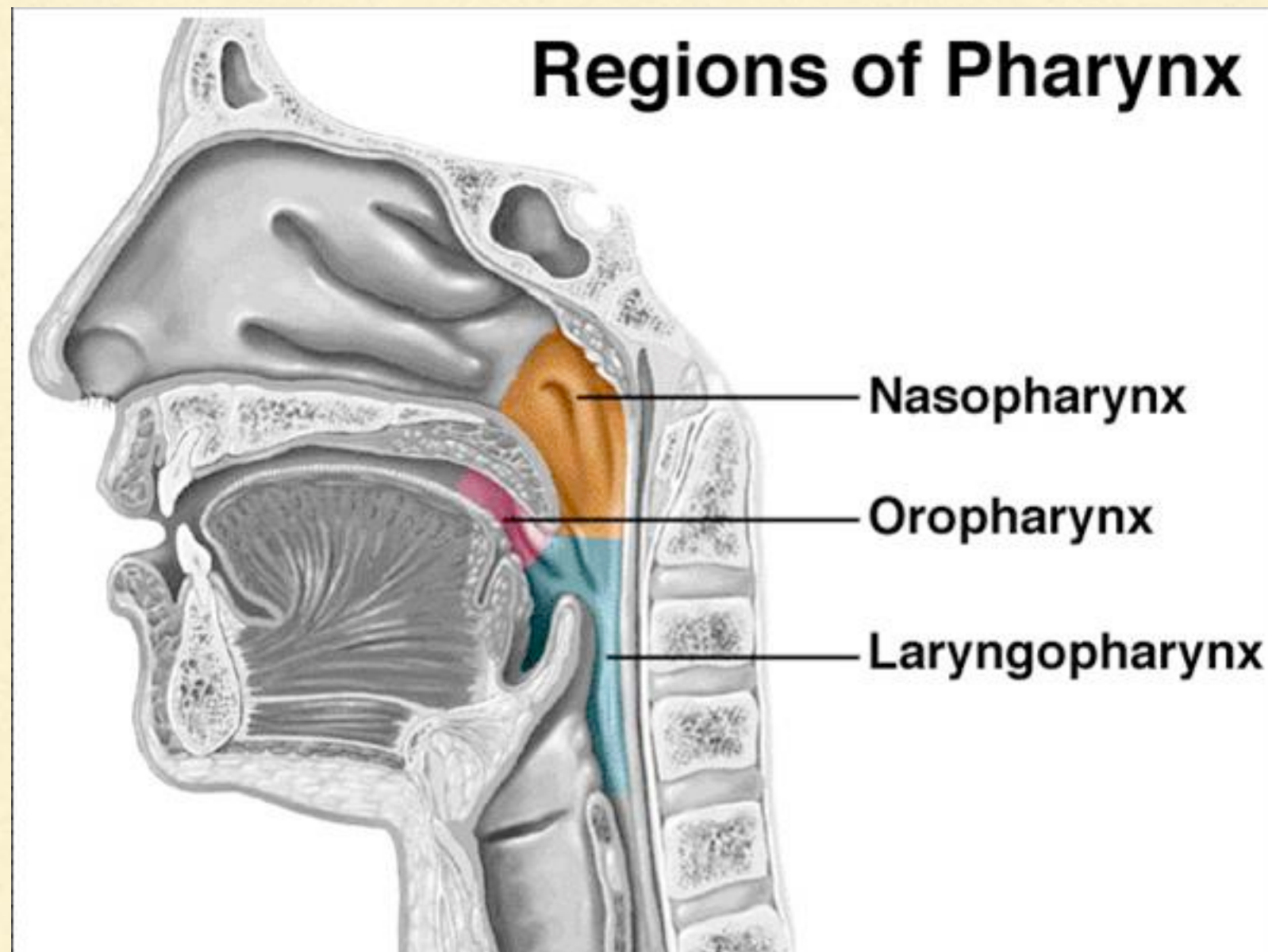


WHAT GAS TRIGGERS RESPIRATORY EFFORT?

Carbon Dioxide (CO₂)



WHAT ARE THE THREE SECTIONS OF THE PHARYNX?



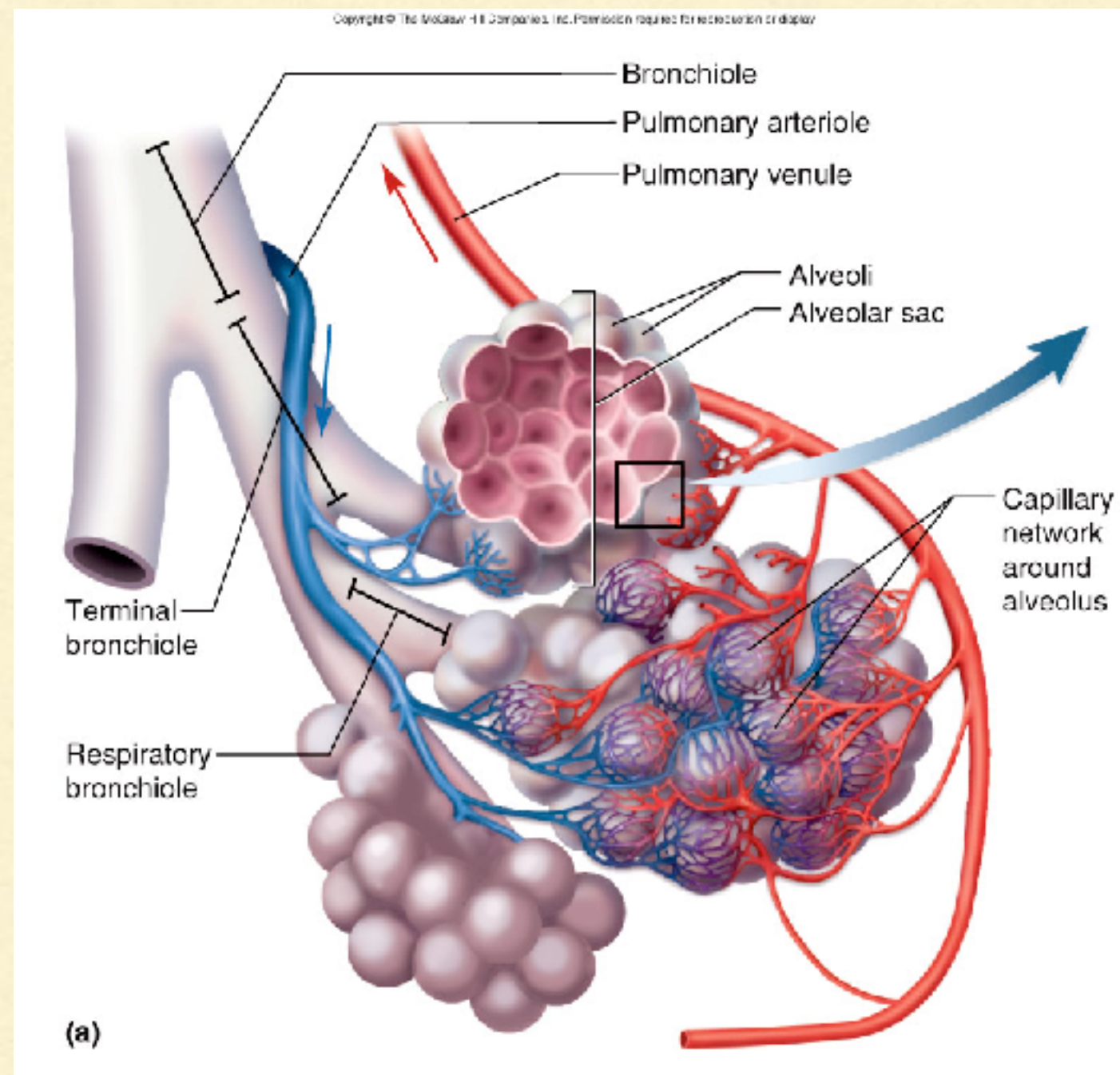
WHAT ARE SOME SIDE EFFECTS OF OVERBAGGING A PATIENT?

- Gastic Distention
- Vomiting
- Lung Damage



WHAT IS THE NAME OF THE SAC-LIKE STRUCTURES IN THE LUNGS WHERE GAS EXCHANGE OCCURS?

- **Alveoli**



WHAT IS THE AMOUNT OF OXYGEN IN THE AIR, AT SEA LEVEL? IN MONROE?

- 20.95% at Sea Level (14.89 psi)
 - 20.95% in Monroe (trick question)
 - 20.95% on Mount Everest (4.69 psi)
-

HOW DO YOU KNOW THAT A PATIENT HAS AN OPEN AIRWAY?

- Audible breath sounds
 - Visual rise and fall of the chest
 - Pink coloration
 - Pulse oximetry
-

HOW DOES THE DIAPHRAGM ASSIST IN BREATHING?

The Mechanics of Respiration

Isolated View of Diaphragm in Motion
Video Demo

www.3D-Yoga.com

HOW DOES CARBON MONOXIDE IMPACT A PERSON'S HEALTH?

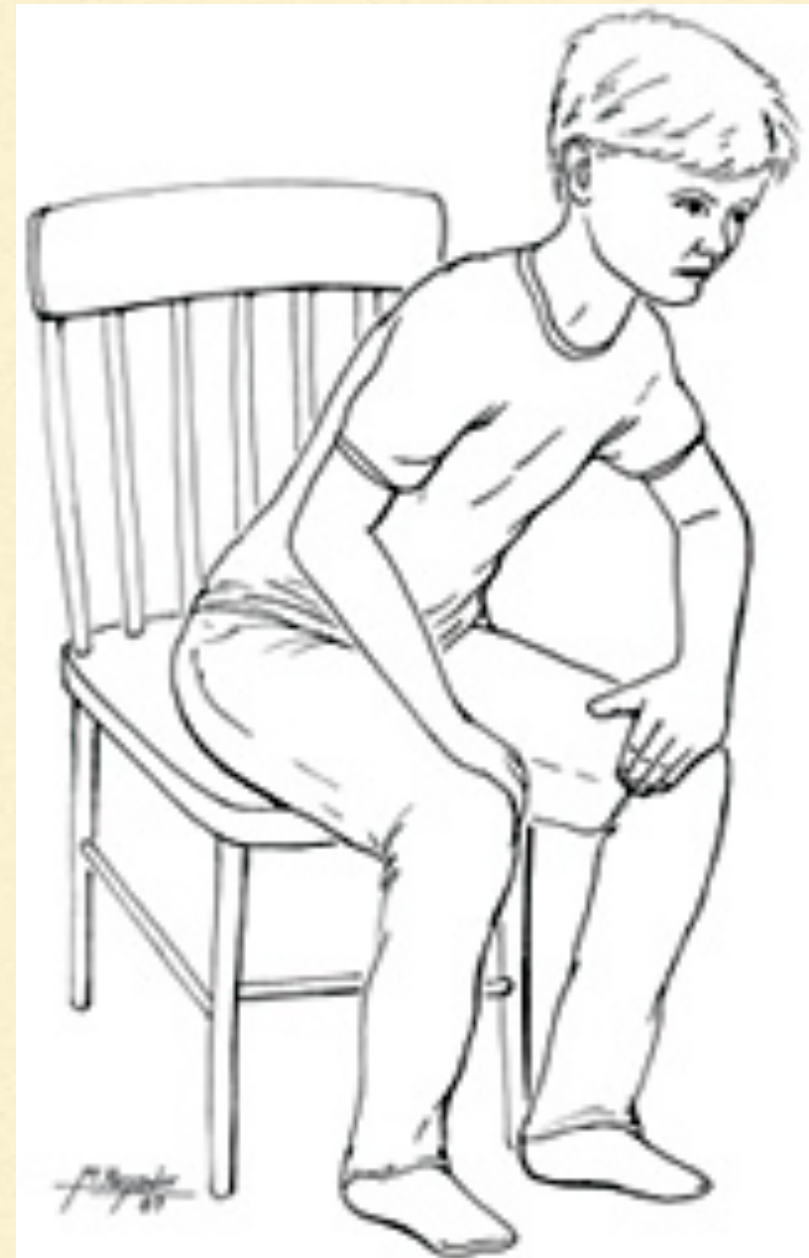
- CO binds to the 4 “seats” on hemoglobin stronger than O₂ (some 230 times stronger).
 - May lead to light-headedness, confusion, headaches, vertigo, and flu-like effects; larger exposures can lead to significant toxicity of the central nervous system and heart, and death.
 - 100% O₂ is the antidote
-

WHAT ARE THE SIGNS AND SYMPTOMS OF HYPOXIA?

- Changes in the color of your skin, ranging from blue to cherry red.
 - Confusion.
 - Cough.
 - Fast heart rate.
 - Rapid breathing.
 - Shortness of breath.
 - Sweating.
 - Wheezing.
-

WHAT ARE THE SIGNS AND SYMPTOMS OF A PERSON HAVING DIFFICULTY BREATHING?

- Bluish lips, fingers, and fingernails
- Chest moving in an unusual way as the person breathes
- Chest pain
- Confusion, lightheadedness, weakness, or sleepiness
- Cough
- Gurgling, wheezing, or whistling sounds
- Muffled voice
- Need to sit up to breathe
- Swollen tongue
- Feeling of impending doom
- Tripod position



DEFINE THE FOLLOWING: APNEA, HYPERPNEA, HYPOXIA, ANOXIA, BRADYPNEA, TACHYPNEA, ORTHOPNEA, HYPERCARBIA AND DYSPNEA.

- Apnea - No breathing
 - Hyperpnea - Abnormal increase in the rate and depth of breathing
 - Hypoxia - Deficiency of oxygen reaching the tissues
 - Anoxia - No oxygen reaching the tissues
 - Bradypnea - Slow breathing
 - Tachypnea - Fast breathing
 - Orthopnea - A person breathes better when they sit up
 - Hypercarbia - High levels of CO₂ in the blood
 - Dyspnea - Difficult or painful breathing
-

ACCORDING TO THE LATEST STANDARDS,
WHEN SHOULD OXYGEN NOT BE GIVEN TO A
PATIENT?

- When O₂ saturations are 94% or higher.

WHAT IS THE MAXIMUM FLOW RATE FOR A NASAL CANNULA? FOR A NON-REBREATHER MASK?

- Nasal Cannula - 6 L/min (35-55%)
- Non-Rebreather Mask - 15 L/min (90-95%)

WHAT DO YOU DO FOR AN ADULT PATIENT WHO IS HAS COMPLETE AIRWAY OBSTRUCTION AND IS CONSCIOUS?

- **Begin the Heimlich Maneuver. If they pass out, help them to the ground. Attempt to ventilate. Begin chest compressions.**

HOW DO YOU ASSIST A PATIENT THAT HAS EPISTAXIS?

- Pinch all the soft parts of the nose together between the thumb and index finger.
 - Press firmly toward the face - compressing the pinched parts of the nose against the bones of the face.
 - Lean forward slightly with the head tilted forward. Leaning back or tilting the head back allows the blood to run back into the sinuses and throat and can cause gagging or inhaling the blood.
 - Hold the nose for at least five minutes. Repeat as necessary until the nose has stopped bleeding.
 - Sit quietly, keeping the head higher than the level of the heart. Do not lay flat or put your head between your legs.
 - Apply ice (wrapped in a towel) to nose and cheeks.
 - Do not put anything into the nose.
 - Seek medical care if the bleeding does not stop.
-

WHAT IS THE MAXIMUM AMOUNT OF TIME A PATIENT SHOULD BE SUCTIONED?

- Adults - 15 seconds max
 - Children - 10 seconds max
 - Infants - 5 seconds max
-

WHILE YOU ARE DEEP SUCTIONING A PATIENT'S AIRWAY, HE BEGINS TO COUGH FORCEFULLY. YOU NOTICE THE PATIENT'S HEART RATE HAS DROPPED. WHICH OF THE FOLLOWING BEST DESCRIBES THIS DROP IN HEART RATE?

- The patient's vagus nerve has been stimulated.

DESCRIBE THE THREE STAGES OF RESPIRATORY EMERGENCIES.

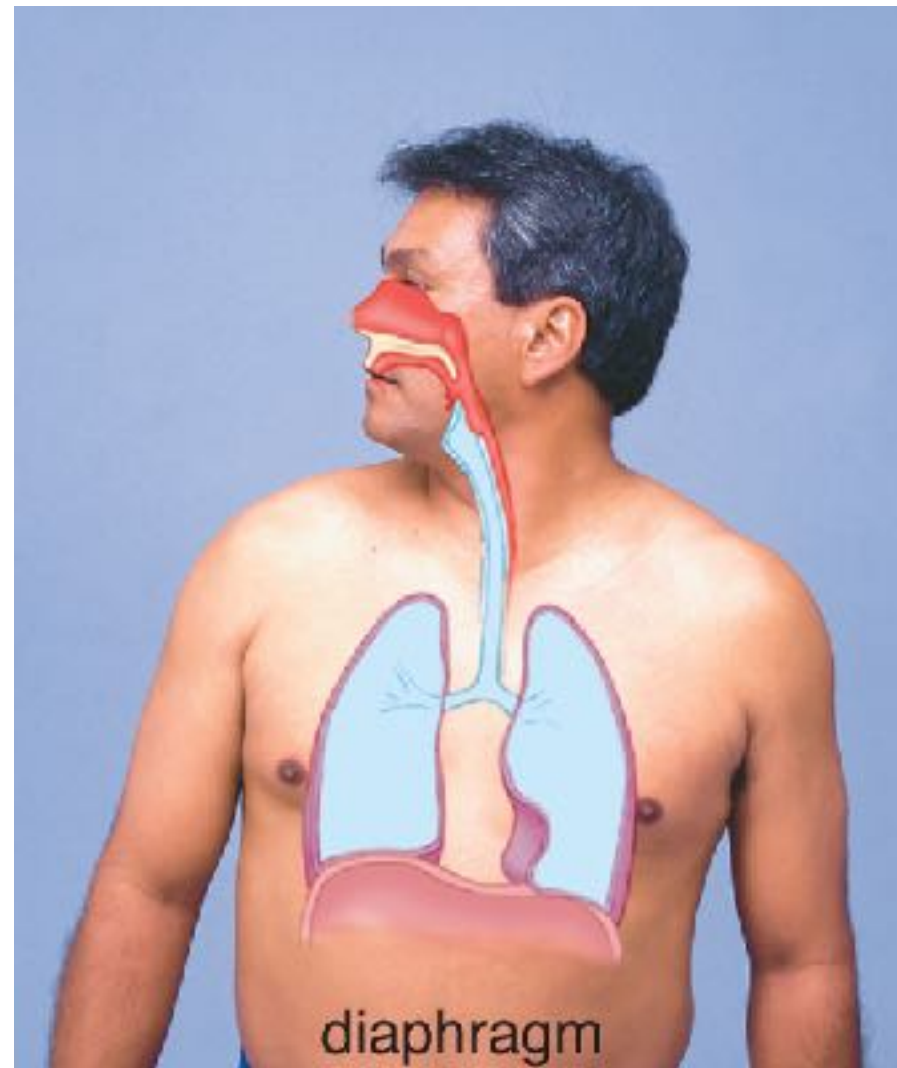
- Respiratory Distress - Body is compensating.
 - Respiratory Failure - Inadequate breathing.
 - Respiratory Arrest - Breathing has stopped.
-

Respiration

Respiratory Anatomy and Physiology

- Diaphragm is muscular structure that separates the chest cavity from the abdominal cavity.
- During normal respiratory cycle, diaphragm and other parts of body work together to inhale and exhale.

Respiratory Anatomy and Physiology



RELAXED

The process of respiration.

Respiratory Anatomy and Physiology

- Inspiration
 - Active process
 - Uses muscle contraction to increase size of chest cavity
 - Intercostal muscles and diaphragm contract.
 - Diaphragm lowers; ribs move upward and outward.
 - Air is pulled into lungs.

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Respiratory Anatomy and Physiology

- Expiration
 - Passive process
 - Rib muscles and diaphragm relax
 - Size of chest cavity decreases
 - Air flows out of lungs

Adequate Breathing

- Breathing sufficient to support life
- Signs
 - No obvious distress
 - Ability to speak in full sentences without having to catch his breath
 - Normal color, mental status, and orientation

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Adequate Breathing

- May be determined by observing rate, rhythm, quality
 - 12 to 20 breaths/minute for adult
 - 15 to 30 breaths/minute for child
 - 25 to 50 breaths/minute for infant
 - Rhythm usually regular
 - Breath sounds normally present and equal

Inadequate Breathing

- Breathing not sufficient to support life.
- Signs
 - Rate out of normal range
 - Irregular rhythm
 - Diminished or absent lung sounds
 - Poor tidal volume

Pediatric Note

- Structure of an infant's and child's airway differs from that of an adult.
 - Smaller airway easily obstructed
 - Proportionately larger tongues
 - Smaller, softer, more flexible trachea
 - Less developed, less rigid cricoid cartilage
 - Heavy dependence on diaphragm for respiration

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Pediatric Note

- Signs of inadequate breathing in infants and children
 - Nasal flaring
 - Grunting
 - Seesaw breathing
 - Retractions

Patient Care

- Inadequate Breathing
 - Assisted ventilation with supplemental oxygen
 - Pocket face mask with supplemental oxygen
 - Two-rescuer bag-valve mask with supplemental oxygen

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Patient Care

- Inadequate Breathing
 - Assisted ventilation with supplemental oxygen
 - Flow-restricted, oxygen-powered ventilation device (FROPVD)
 - One-rescuer bag-valve mask with supplemental oxygen

Adequate and Inadequate Artificial Ventilation

- Chest rise and fall should be visible with each breath.
- Adequate artificial ventilation rates
 - 12 breaths per minute for adults
 - 20 breaths per minute for infants and children

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Adequate and Inadequate Artificial Ventilation

- Increasing pulse rates can indicate inadequate artificial ventilation in adults.
- Decreasing pulse rates can indicate inadequate artificial ventilation in pediatric patients.

Think About It

- How might you recognize the progression from adequate breathing to inadequate breathing in the assessment of your patient?
- How might your patient change during this transition?

Breathing Difficulty

Breathing Difficulty

- Patient's subjective perception
- Feeling of labored, or difficult, breathing
- Amount of distress felt may or may not reflect actual severity of condition.

Breathing Difficulty



1. Assess the patient and ensure that he meets the criteria for CPAP.

Breathing Difficulty

- Onset
 - When did it begin?
- Provocation
 - What were you doing when this came on?
- Quality
 - Do you have a cough? Are you bringing anything up with it?

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Breathing Difficulty

- Radiation
 - Do you have pain or discomfort anywhere else in your body? Does it seem to spread to any other part of your body?

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Breathing Difficulty

- Severity
 - On a scale of 1 to 10, how bad is your breathing trouble?
- Time
 - How long have you had this feeling?

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Breathing Difficulty

- Observing
 - Altered mental status
 - Unusual anatomy
 - Barrel chest
 - Patient's position
 - Tripod position
 - Sitting with feet dangling, leaning forward

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Breathing Difficulty

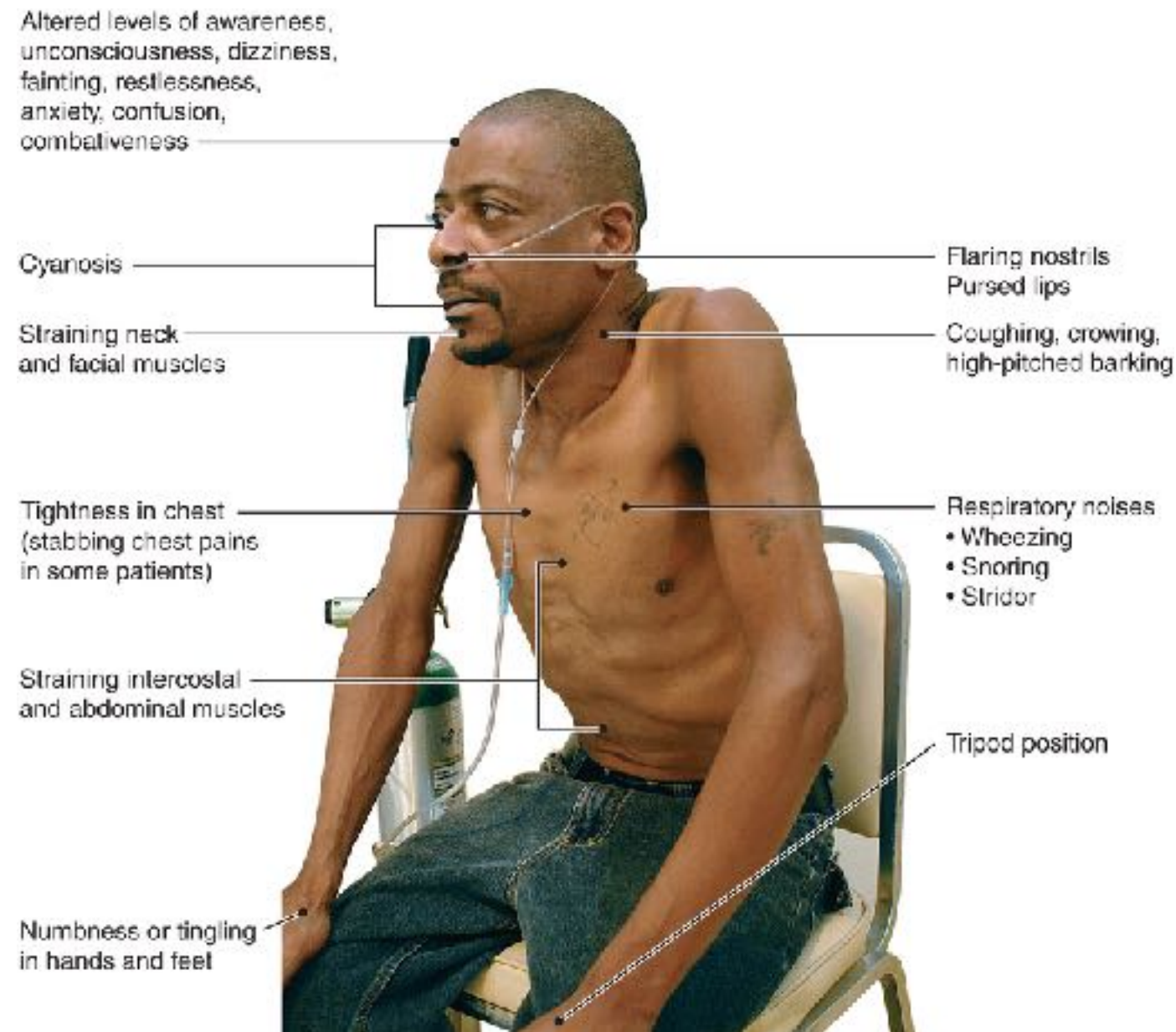
- Observing
 - Work of breathing
 - Retractions
 - Use of accessory muscles
 - Flared nostrils
 - Pursed lips
 - Number of words patient can say without stopping

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Breathing Difficulty

- Observing
 - Pale, cyanotic, or flushed skin
 - Pedal edema
 - Sacral edema
 - Oxygen saturation, or SpO₂, reading less than 95 percent on the pulse oximeter

Breathing Difficulty



Signs and symptoms of breathing difficulty.

© Ray Kemp/911 Imaging

Breathing Difficulty

- Observing
 - Noisy breathing
 - Audible wheezing (heard without stethoscope)
 - Gurgling
 - Snoring
 - Crowing
 - Stridor
 - Coughing

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Breathing Difficulty

- Auscultating
 - Lung sounds on both sides during inspiration and expiration

Assessment: Auscultation



6. Reassess the patient's level of distress and vital signs.

Breathing Difficulty

- Auscultating
 - Wheezes
 - High-pitched sounds created by air moving through narrowed air passages
 - Crackles
 - Fine crackling or bubbling sound heard on inspiration and caused by fluid in alveoli or by opening of closed alveoli

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Breathing Difficulty

- Auscultating
 - Rhonchi
 - Lower-pitched sounds resembling snoring or rattling, caused by secretions in larger airways
 - Stridor
 - High-pitched, upper-airway sounds indicating partial obstruction of trachea or larynx

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Breathing Difficulty

- Evaluating vital sign changes, which may include:
 - Increased or decreased pulse rate
 - Changes in breathing rate
 - Changes in breathing rhythm
 - Hypertension or hypotension

Patient Care

- Breathing difficulty
 - Assure adequate ventilations.
 - If breathing is inadequate, begin artificial ventilation.
 - If breathing is adequate, use a nonrebreather mask at 15 liters per minute.

Patient Care



4. Use settings as defined in your protocols.

Patient Care

- Breathing difficulty
 - Place patient in position of comfort.
 - Administer prescribed inhaler.
 - Administer continuous positive airway pressure (CPAP).

Continuous Positive Airway Pressure (CPAP)

- Simple principles
 - Blowing oxygen or air continuously at low pressure into airway prevents alveoli from collapsing at end of exhalation.
 - Can prevent fluid shifting into alveoli from surrounding capillaries

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Continuous Positive Airway Pressure (CPAP)

- Common uses
 - Pulmonary edema
 - Drowning
 - Asthma and COPD
 - Respiratory failure in general

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Continuous Positive Airway Pressure (CPAP)

- Contraindications
 - Severely altered mental status
 - Lack of normal, spontaneous respiratory rate
 - Inability to sit up
 - Hypotension/shock

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Continuous Positive Airway Pressure (CPAP)

- **Contraindications**
 - Nausea and vomiting
 - Penetrating chest trauma
 - Shock
 - Upper GI bleeding or recent gastric surgery
 - Conditions preventing good mask seal

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Continuous Positive Airway Pressure (CPAP)

- Side effects
 - Hypotension
 - Pneumothorax
 - Increased risk of aspiration
 - Drying of corneas

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Continuous Positive Airway Pressure (CPAP)

- Explain procedure to patient.
- Start with low level CPAP.

Patient Care: Using CPAP



2. Explain the device to the patient. The mask and snug seal may initially cause the patient to feel smothered and anxious.

Continuous Positive Airway Pressure (CPAP)

- Reassess patient's mental status, vital signs, and dyspnea level frequently.
- Raise CPAP level if no relief within a few minutes.

Patient Care: Using CPAP



5. Reassess and monitor the patient.

Continuous Positive Airway Pressure (CPAP)

- If patient deteriorates, remove CPAP and begin ventilating with bag mask.

Patient Care: Using CPAP



6. Discontinue CPAP and ventilate the patient if breathing becomes inadequate.

Respiratory Conditions

Chronic Obstructive Pulmonary Disease (COPD)

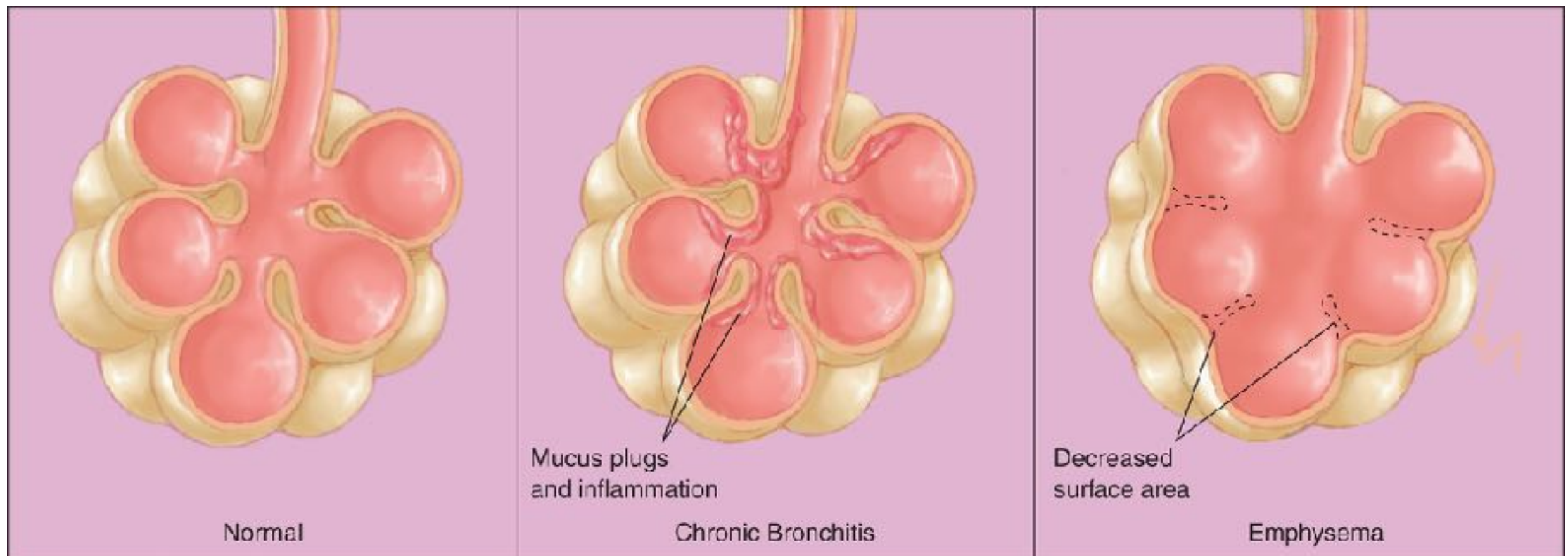
- Broad classification of chronic lung diseases
- Includes emphysema, chronic bronchitis, and black lung
- Overwhelming majority of cases are caused by cigarette smoking.

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Chronic Obstructive Pulmonary Disease (COPD)

- Chronic bronchitis
 - Bronchiole lining inflamed
 - Excess mucus produced
 - Cells in bronchioles that normally clear away mucus accumulations are unable to do so

COPD: Chronic Bronchitis



Chronic bronchitis and emphysema are chronic obstructive pulmonary diseases.

Chronic Obstructive Pulmonary Disease (COPD)

- Emphysema
 - Alveoli walls break down.
 - Surface area for respiratory exchange is greatly reduced.
 - Lungs lose elasticity.
 - Results in air with carbon dioxide being trapped in lungs, reducing effectiveness of normal breathing

Asthma

- Chronic disease with episodic exacerbations
- During attack, small bronchioles narrow (bronchoconstriction); mucus is overproduced.
- Results in small airway passages practically closing down, severely restricting air flow

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Asthma

- Airflow mainly restricted in one direction
- Inhalation
 - Expanding lungs exert outward pull, increasing diameter of airway and allowing air flow into lungs.
- Exhalation
 - Opposite occurs and air becomes trapped in lungs.

Pulmonary Edema

- Abnormal accumulation of fluid in alveoli
- Patients with congestive heart failure (CHF) may experience difficulty breathing because of this.

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Pulmonary Edema

- Pressure builds up in pulmonary capillaries.
- Fluid crosses the thin barrier and accumulates in the alveoli.
- Fluid occupying lower airways makes it difficult for oxygen to reach blood.
- Patient experiences dyspnea.

continued on next slide

Pulmonary Edema

- Common signs and symptoms
 - Dyspnea
 - Anxiety
 - Pale and sweaty skin
 - Tachycardia
 - Hypertension
 - Respirations are rapid and labored.
 - Low oxygen saturation

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Pulmonary Edema

- Common signs and symptoms
 - In severe cases, crackles or sometimes wheezes may be audible.
 - Patients may cough up frothy sputum, usually white, but sometimes pink-tinged.

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Pulmonary Edema

- Treatment
 - Assess for and treat inadequate breathing.
 - High-concentration oxygen
 - If possible, keep patient's legs in dependent position.
 - CPAP may be used to push fluid back out of lungs and into capillaries.

Think About It

- Might it be possible for a patient to have multiple respiratory disorders?
- Could a person with an underlying diagnosis of COPD also have pulmonary edema?

Pneumonia

- Infection of one or both lungs caused by bacteria, viruses, or fungi
- Results from inhalation of certain microbes
- Microbes grow in lungs and cause inflammation.

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Pneumonia

- Signs and symptoms
 - Shortness of breath with or without exertion
 - Coughing
 - Fever and severe chills
 - Chest pain (often sharp and pleuritic)

continued on next slide

Pneumonia

- Signs and symptoms
 - Headache
 - Pale, sweaty skin
 - Fatigue
 - Confusion

continued on next slide

Pneumonia

- Treatment
 - Care mostly supportive
 - Assess for and treat inadequate breathing.
 - Oxygenate
 - Transport

Spontaneous Pneumothorax

- Lung collapses without injury or other obvious cause.
- Tall, thin people, and smokers are at higher risk for this condition.

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Spontaneous Pneumothorax

- Signs and symptoms
 - Sharp, pleuritic chest pain
 - Decreased or absent lung sounds on side with injured lung
 - Shortness of breath/dyspnea on exertion
 - Low oxygen saturation, cyanosis
 - Tachycardia

continued on next slide

Spontaneous Pneumothorax

- Treatment
 - Transport for definitive care, as patients frequently require chest tube.
 - Administer oxygen.
 - CPAP contraindicated

Pulmonary Embolism

- Blockage in blood supply to lungs
- Commonly caused by deep vein thrombosis (DVT)
- Increased risk from limb immobility, local trauma, or abnormally fast blood clotting

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Pulmonary Embolism

- Signs and symptoms
 - Sharp, pleuritic chest pain
 - Shortness of breath
 - Anxiety
 - Coughing
 - Sweaty skin that is pale or cyanotic
 - Tachycardia
 - Tachypnea
 - Wheezing

continued on next slide

Pulmonary Embolism

- Treatment
 - Difficult to differentiate in field
 - Transport to definitive care.
 - Oxygenate.

Epiglottitis

- Infection causing swelling around and above the epiglottis.
- In severe cases, swelling can cause airway obstruction.

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Epiglottitis

- Signs and symptoms
 - Sore throat, drooling, difficult swallowing
 - Preferred upright or tripod position
 - Sick appearance
 - Muffled voice
 - Stridor

continued on next slide

Epiglottitis

- Treatment
 - Keep patient calm and comfortable.
 - Do not inspect throat.
 - Administer high-concentration oxygen if possible without alarming patient.
 - Transport.

Cystic Fibrosis

- Genetic disease typically appearing in childhood
- Causes thick, sticky mucus accumulating in the lungs and digestive system
- Mucus can cause life-threatening lung infections and serious digestion problems.

continued on next slide

Cystic Fibrosis

- Signs and symptoms
 - Coughing with large amounts of mucus
 - Fatigue
 - Frequent occurrences of pneumonia
 - Abdominal pain and distention
 - Coughing up blood
 - Nausea
 - Weight loss

continued on next slide

Cystic Fibrosis

- Treatment
 - Caregiver often best resource for baseline assessment of patient.
 - Caregivers can often guide treatment.
 - Assess for, and treat, inadequate breathing.
 - Transport.

Viral Respiratory Infections

- Infection of respiratory tract
- Usually minor but can be serious, especially in patients with underlying respiratory diseases like COPD

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Viral Respiratory Infections

- Often starts with sore or scratchy throat with sneezing, runny nose, and fatigue
- Fever and chills
- Infection can spread into lungs, causing shortness of breath.
- Cough can be persistent.
 - May produce yellow or greenish sputum

The Prescribed Inhaler

The Prescribed Inhaler

- Metered-dose inhaler
- Provides a metered (exactly measured) inhaled dose of medication
- Most commonly prescribed for conditions causing bronchoconstriction

The Prescribed Inhaler

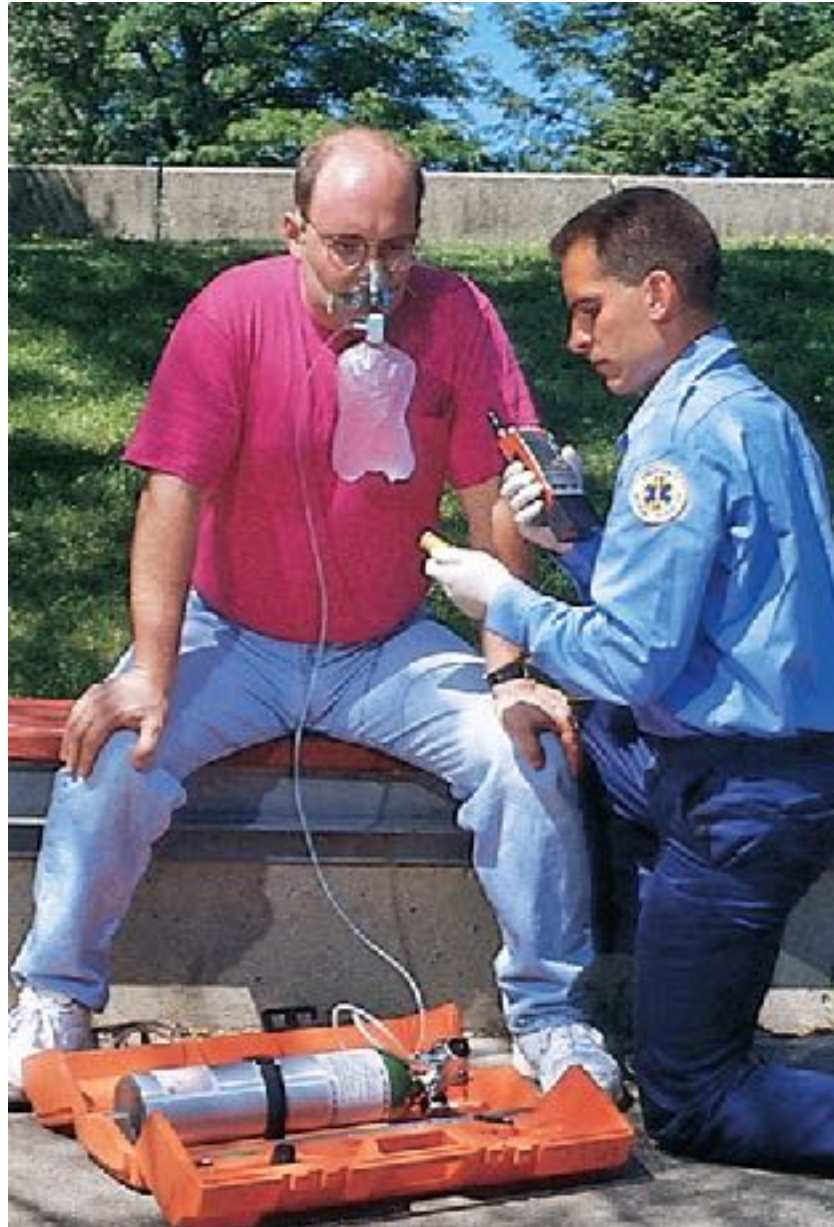


Prescribed Inhaler

The Prescribed Inhaler

- Before administering inhaler
 - Right patient, right time, right medication, right dose, right route
 - Check expiration date.
 - Shake inhaler vigorously.
- Patient alert enough to use inhaler
 - Use spacer device if patient has one.

The Prescribed Inhaler



3. Ensure the five “rights”: 1. Right patient; 2. Right time; 3. Right medication; 4. Right dose; 5. Right route.

Spacer Device



A spacer between the inhaler and patient makes the timing during inhaler use less critical.

The Prescribed Inhaler

- To administer inhaler:
 - Have patient exhale deeply.
 - Have patient put lips around opening.
 - Press inhaler to activate spray as patient inhales deeply.
 - Make sure patient holds breath as long as possible so medication can be absorbed.

The Prescribed Inhaler



Have the patient seal his lips around the mouthpiece and breathe deeply. Instruct the patient to hold his breath for 2 to 3 seconds if possible. Continue until the medication is gone from the chamber.

The Small-Volume Nebulizer

The Small-Volume Nebulizer

- Medications used in metered-dose inhalers can also be administered by a small-volume nebulizer (SVN).
- Nebulizing
 - Running oxygen or air through liquid medication
- Patient breathes vapors created.

continued on next slide

Remember

- Determine if the patient's breathing is adequate, inadequate, or absent.
- Choose the appropriate oxygenation or ventilation therapy.

continued on next slide

Remember

- Consider whether to assist a patient with or administer respiratory medications.
 - Do I have protocols and medications that may help this patient?
 - Does the patient have a presentation and condition that may fit these protocols?

continued on next slide

Remember

- Consider whether to assist a patient with or administer respiratory medications.
 - Are there any contraindications or risks to using medications in my protocols?

Questions to Consider

- What would you expect a patient's respiratory rate to do when the patient gets hypoxic? Why?
- What would you expect a patient's pulse rate to do when the patient gets hypoxic? Why?
- List the signs of inadequate breathing.

continued on next slide

Questions to Consider

- Would you expect to assist a patient with their prescribed inhaler when they are experiencing congestive heart failure? Why or why not?
- List some differences between adult and infant/child respiratory systems.