Chapter 7
Airway Management and Ventilation

Learning Objectives

- Identify the major structures of the respiratory system on a diagram
- List the signs of inadequate breathing
- Describe the steps in the head-tilt/chin-lift
- Relate the mechanism of injury to opening the airway

- Describe the steps in the jaw thrust
- Describe the importance of having a suction unit ready for immediate use when providing emergency medical care
- Describe the techniques of suctioning
Learning Objectives

- Describe how to ventilate a patient with a resuscitation mask or barrier device
- Differentiate between providing ventilation for an infant or a child and for an adult
- List the steps for providing mouth-to-mouth and mouth-to-stoma ventilation

Learning Objectives

- Describe how to measure and insert oropharyngeal and nasopharyngeal airways
- Describe how to clear a foreign body airway obstruction in a responsive adult

Learning Objectives

- Describe how to clear a foreign body airway obstruction in a responsive infant and child with complete obstruction or partial airway obstruction and poor air exchange
- Describe how to clear a foreign body airway obstruction in an unresponsive adult
Learning Objectives

- Describe how to clear a foreign body airway obstruction in an unresponsive infant and child

Introduction

- Priority is opening and maintaining the patient's airway
  - The body consists of specialized cells that make up muscle, bone, and tissues
    - Each cell needs O₂ and fuel to produce energy required to perform their specific functions
    - The cells consume O₂ and fuel and give off CO₂ and waste products

- O₂ enters the body through the respiratory system
  - Airway must be open to accomplish this task
    - Body normally maintains airway automatically
Introduction

- When the level of consciousness decreases because of a traumatic event, the body may no longer maintain the airway
  - Must understand the structure and function of the airway and respiratory systems

Respiratory System

- Air normally enters the body through the nose
  - Filters the air, warms it to body temperature, and humidifies it
  - Fine hairs within the nostrils filter out larger particles of dust or other contaminants
  - Air then passes over small structures that resemble fins on a radiator (turbinates)
    - Warm and humidify the air

Respiratory System

- Pharynx (throat) lies behind the nose and the mouth
  - It is divided into two parts
    - Oropharynx
    - Nasopharynx
Respiratory System

- Epiglottis is a leaf-shaped structure
  - Prevents food, liquids, and foreign matter from entering the trachea (windpipe) while swallowing

Respiratory System

- Larynx (voice box) contains the vocal cords
  - Air moving over the vocal cords creates vibrations
    - You turn the vibration into words by controlling your vocal cords

Respiratory System

- Trachea is 9 inches long and is made of flexible cartilage
  - Looks like corrugated pipe
  - Connects upper airway to the lungs
Respiratory System

- Lungs
  - Complex system of tubes that branch off and decrease in size until air is delivered to alveoli (air sacks)

- Alveoli are encircled by capillaries (blood vessels) that transport $O_2$ to cells of the body
  - Transfer of $O_2$ and $CO_2$ between air and blood takes place where alveoli and capillaries meet
  - Considered respiration
Respiratory System

- Mechanics of breathing (ventilation) rely on pressure changes that occur within the chest
  - Brain receives signals from receptors in the blood that are sensitive to CO₂ and O₂ levels
    - An increase in CO₂ level or a decrease in O₂ level in blood signals the brain to increase the respiratory rate

The Respiratory System

- The mechanics of breathing (ventilation) rely on pressure changes that occur within the chest
  - Lungs are protected within the semirigid structure created by the ribs and sternum
  - Diaphragm
    - Located between chest and abdomen
    - Large muscle
A-Airway

- Opening the airway
  - When first approaching the patient, it is necessary to assess for responsiveness
    - Do this by asking patient questions
      - If a verbal response, patient has an open airway
      - If no response, gently tap patient’s shoulder

- When patient becomes unconscious, the tongue may become flaccid (limp) and fall back into the airway
  - If not corrected within a very short time, irreparable brain damage and death may occur
Opening the airway

- **Head-tilt/chin-lift**
  - Best method for opening the airway in uninjured, unresponsive patients
  - Provides most effective airway position
  - Method should not be used with trauma patients

Place one hand on the patient’s forehead and apply enough pressure to lift the head back. With your other hand lift up and pull the patient’s jaw forward with your fingers on the body part of the chin.

Avoid pressing your fingers deeply into soft tissues of the chin because this can cause airway obstruction.
Avoid using your thumb to lift the chin.
Use fingers.
Keep patient’s mouth open.
A-Airway

- Opening the airway
  - **Jaw thrust**
    - Jaw thrust without head lift is alternative method of opening airway
    - Safest technique for patients with suspected spinal injury

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A-Airway

- Opening the airway
  - **Jaw thrust**
    - Position yourself behind the patient and place your fingers on the angles of patient's lower jaw
    - Lift with both hands to move jaw forward

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A-Airway

- Opening the airway
  - **Trauma chin-lift**
    - An alternative to the trauma chin-lift or the tongue-jaw lift
    - Like other manual airway maneuvers, the trauma chin-lift will move the tongue out of the back of the airway
A-Airway

- Opening the airway
  - Trauma chin-lift
    - Position yourself at patient’s side and grasp lower jaw with your thumb, placing your fingers beneath patient’s chin
    - Pull up on patient’s chin to elevate jaw and open the mouth

- Inspecting the airway
  - After the airway is opened, you should inspect the mouth to see if anything is blocking the airway
    - Open patient’s mouth with your gloved hand and look inside the mouth to see if it is clear (patent) or blocked by fluids (such as blood, mucus, or vomit), solids (such as food or other foreign objects), or teeth, including dentures

- Clearing the airway
  - All foreign objects should be cleared from the airway immediately, by whatever means possible, and as often as needed
    - Prevents aspiration into lungs
A-Airway

Clearing the airway

The recovery position

- Uses the force of gravity to allow fluids to drain from the mouth and helps to keep airway clear
- Position also keeps the tongue from falling back and blocking the airway in an unconscious patient without suspected spinal injuries

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Clearing the airway

The recovery position

- Elevate patient’s left arm above head or place it along patient’s left side with the palm facing his left hip
- While providing support to the head and neck, grasp patient’s right shoulder and roll the patient toward you
- Continue moving the patient off the shoulder and onto the left anterior chest and abdomen area
- Bend the patient’s right leg slightly, and place the right leg in front of the left leg for stabilization and comfort

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Clearing the airway

The recovery position

- Patient’s left arm can be placed at his side or left extended with the elbow bent to position the forearm at the top of the patient’s head
- Place the patient’s right hand under the chin and left cheek to help stabilize the head
A-Airway

- Clearing the airway
  - Finger sweeps
    - If on inspection of the airway you see foreign material or vomit, it should be quickly removed.
    - To do this, first roll the patient onto his/her side.
    - With a gloved hand, sweep out solid objects with one or two fingers.

- Suctioning
  - If recovery position or finger sweep is ineffective, suction may be indicated.
  - Your first responder equipment and training may include some type of suction unit.

- Suctioning
  - To suction the mouth of an unresponsive patient, a hard or rigid tonsillar suction catheter is preferred.
    - Insert catheter into patient’s mouth no deeper than the base of the patient’s tongue.
    - Suction is applied only as you move the catheter out of the patient’s mouth, not while inserting it into the mouth.
    - Never apply for more than 15 seconds at a time.
    - After suctioning, monitor patient’s breathing and pulse and provide ventilation if needed.
Mechanical suction units can be quickly overwhelmed by high volumes of fluid.

- Inadequate for removing solid objects such as teeth, foreign bodies, or food.
- To remove solid objects you should place the patient on his side and sweep out the mouth with a gloved hand, then resume suctioning.

Once patient’s airway is open, it is necessary to maintain the open position.

- Accomplished by continuing to hold the patient’s head in a head-tilt/chin-lift or jaw-thrust position and by using OPA or NPA.
Oropharyngeal airways (OPA)

- OPA is a disposable device that is inserted into the oral cavity and positioned to move the tongue forward and keep the airway open
- Made of hard plastic and comes in many sizes to fit infants through adults
Skill 7-1
Inserting an Oropharyngeal Airway

- Put on proper PPE
- OPA should be sized appropriately

Skill 7-1
Inserting an Oropharyngeal Airway

- Open patient's mouth by pulling down on the jaw
- Insert airway upside down with tip facing toward head
- Gently run tip along roof of mouth until it meets resistance

Skill 7-1
Inserting an Oropharyngeal Airway

- Once OPA reaches back of throat, rotate 180° until the flange is on the teeth, level with lips
Skill 7-1
Inserting an Oropharyngeal Airway

- OPA in its final position
- If patient begins to cough or gag, remove immediately

Skill 7-1
Inserting an Oropharyngeal Airway

- Alternative method for inserting an OPA uses a tongue blade and inserts the OPA in its normal anatomical position

A-Airway

- Nasopharyngeal airways (NPA)
  - Alternative to the OPA is the NPA
  - Soft, rubbery device serves the same purpose as the OPA, but bypasses some of the gag reflex nerves at the back of the tongue
  - Less likely to stimulate vomiting
  - Good choice for responsive patients who need help keeping their tongue from obstructing the airway
Skill 7-2
Inserting a Nasopharyngeal Airway

- Put on correct size PPE
- Select correct size NPA
- Inspect nostrils for size and obstruction
- Make sure diameter of NPA is less than diameter of nostril
Skill 7-2
Inserting a Nasopharyngeal Airway

- Insert NPA into right nostril first, design makes insertion easier in this nostril
- Insert NPA posteriorly with bevel toward base of nostril/septum
- Insert toward back of head

Skill 7-2
Inserting a Nasopharyngeal Airway

- Once airway clears the nostril, you will feel a decrease in resistance
- Continue to insert the NPA until flange is touching nostril

B-Breathing

- Look, listen, and feel for whether your patient is breathing
  - Look to see if the chest is rising and falling
  - Listen for sounds of breathing
  - Feel for any breaths against your cheek
B-Breathing

Breathing is normally effortless
- Anything that draws your attention to the fact that someone is breathing is most probably a sign of distress

Dyspnea: anything that indicates the patient is working harder to breath
- Respiratory arrest or the total lack of breathing is the most critical finding
- If patient is able to speak and respond to your questions, you can assume he is breathing
  - It is important to note the effort of breathing

Mouth-to-mask ventilation
- Pocket mask with a one-way valve provides a safe barrier between you and your patient
  - It is constructed of semirigid plastic with a soft, air-filled cuff
  - Mask should be transparent so you can watch for vomiting
  - Cuff should create a seal when you push it firmly against the patient’s face
  - Mask has a one-way valve to divert the patient’s exhalations
Skill 7-3
Mouth-to-Mask Ventilation

- Put on appropriate PPE
- Position yourself at head of patient
- Maintain open airway by using manual/mechanical techniques

Skill 7-3
Mouth-to-Mask Ventilation

- Take in a normal breath, place your mouth over mouthpiece, breath evenly in patient's mouth for 1 second
- Remove mouth from mouthpiece and allow patient to exhale

B-Breathing

- Mouth-to-barrier ventilation
  - Barrier devices place a layer of thin film with a filter or valve between you and the patient
  - Offer variable levels of protection based on their design
  - May prevent transmission of disease, but still requires very close contact with the patient
  - Does not have exhalation valve and air often leaks around the seal
  - Presents little resistance to your ventilation
  - Advantage is its compact size; some can even fit on a key ring
Skill 7-4
Mouth-to-Barrier Ventilation

- Put on appropriate PPE
- Place yourself at patient’s head, maintain an open airway through use of manual or mechanical techniques
- Place barrier device over patient’s mouth

- Place your mouth over mouthpiece, pinch nostrils, and breathe slowly into patient’s mouth
- Remove your mouth from mouthpiece and release patient’s nose
- Watch for vomiting or for patient to start breathing on his own
B-Breathing

- Mouth-to-mouth ventilation
  - Effective method to deliver an adequate volume of air to a nonbreathing patient
    - Does not provide a high concentration of O₂

Skill 7-5
Mouth-to-Mouth Ventilation

- Put on appropriate PPE
- Position yourself at the patient’s head and maintain open airway through the use of manual/mechanical techniques
- Place your mouth over patient’s mouth and pinch the patient’s nose with your fingers

Skill 7-5
Mouth to Mouth Ventilation

- Give breath over 1 second for infant, child, or adult
- Delivery of your breath should cause the patient’s chest to visibly rise
  - Avoid hyperventilation
  - For a infant, place you mouth over their mouth and nose
Skill 7-5  
Mouth-to-Mouth Ventilation

- Remove your mouth and release the patient’s nose to allow the patient to exhale
- Continue rescue breathing at the rate of one breath every 5-6 seconds (10-12 breaths per minute) for an adult
  - Every 3-5 seconds (12-20 breaths a minute) for an infant/child

Skill 7-5  
Mouth-to-Mouth Ventilation

- Continue to maintain an open airway and watch for any signs that the patient has vomited or has started breathing on his own

B-Breathing

- Foreign body airway obstruction
  - Rescue breathing on any patient may not be successful
    - Patient may be choking on food or other foreign material or experiencing an airway obstruction caused by bleeding into the airway or vomiting
      - This is called an FBAO
B-Breathing

- Foreign body airway obstruction
  - Complete airway obstruction blocks any air from entering or exiting the lungs
    - Patient cannot cough or speak

Skill 7-6
Complete FBAO (Conscious Adult)

- Ask patient, “Are you choking? Or “Can you speak?”
- If there is no response

Skill 7-6
Complete FBAO (Conscious Adult)

- Position yourself behind patient
- Wrap your arms around patient, placing thumb side of one hand above naval but below xiphoid process
Skill 7-6
Complete FBAO (Conscious Adult)

- Place your second hand on top of the first and apply pressure in an inward and upward thrust
- Repeat until object is expelled or patient becomes unconscious

Skill 7-6
Complete FBAO (Conscious Adult)

- If obese/pregnant, use chest thrusts
- Place your arms around patient’s chest, under armpits
- Give quick backward thrusts until object is expelled/patient becomes unconscious

Skill 7-7
FBOA (Unconscious Adult)

- Open patient’s airway using either head-tilt/chin-lift or trauma chin-lift; look for foreign airway obstruction
- If you see the object, turn victim’s head to the side and gently remove object using finger sweep motion
Skill 7-7
FBOA (Unconscious Adult)

- Open airway and attempt ventilation
- If you cannot ventilate after first attempt, reposition head, open airway, and try again

Skill 7-7
FBOA (Unconscious Adult)

- If your breaths do not go in, immediately begin chest compressions in the middle of patient's chest, using same technique you would for CPR

Skill 7-7
FBOA (Unconscious Adult)

- Following 30 chest compressions, open the airway and look for obstruction
- If you are able to visualize obstruction, turn patient's head to the side and remove the object using a finger sweep motion
- Attempt to ventilate by giving patient two breaths
Skill 7-7
FBOA (Unconscious Adult)

- Sequence is same for pregnant or obese patients

Special Considerations

- Infants and children
  - Airways are different from adult airways
    - Smaller and narrower
    - Tongue is larger and takes up more space
    - Trachea is less developed and more flexible
    - Chest wall is more pliable

- Heads are larger in proportion to their bodies
  - This can cause the neck to become hyperflexed and close of the airway
Special Considerations

- Infants and children
  - Another potential problem is hyperextension of the airway, crimping it off
    - Problems are due to the flexibility of the immature trachea

Special Considerations

- Infants and children
  - FBAO
    - For children <1 year, procedure for clearing an FBAO is the same as that for an adult but is performed with less force
Special Considerations

- Infants and children
  - FBAO
    - In infants >1 year, confirm that the airway is obstructed by observing for air movement and adequate breathing
    - Inability to cry can be a key indicator of complete airway obstruction
    - If obstruction is present and child is conscious, position yourself behind the child and administer abdominal thrusts
    - Continue thrusts until the obstruction is dislodged or the child becomes unconscious

- If the child becomes unconscious, open the airway using the head-tilt/chin-lift, and look into mouth
  - If you can see a foreign body, remove it using the finger sweep
  - If this fails, reposition the head and attempt to ventilate the child

- Immediately begin five cycles, or about 2 minutes of cardiopulmonary resuscitation (CPR)
  - CPR for the FBAO victim is performed in the same manner as regular CPR except open the victim’s airway wide before each breath and look for the obstruction
Special Considerations

- Infants and children
  - FBAO
    - If obstruction is visible, remove it using a finger sweep and then attempt to ventilate
    - Continue CPR unless child begins to breathe spontaneously
    - If child still cannot breathe after five cycles of CPR, call EMS and then continue CPR until EMS arrives

- If an airway obstruction is present, sit or kneel with the infant in your lap to provide more stability
  - Place baby face down, straddling your arm, cradle baby’s face with your hand
  - Using the heel of one hand, administer five back slaps between the infant’s shoulder blades
  - Immediately following the back slaps, sandwich the baby between your arms, roll the baby over, and administer five chest compressions
  - Repeat until airway obstruction is relieved or the infant becomes unconscious
Special Considerations

• Infants and children
  • FBAO
    ▶ If the infant becomes unresponsive, place infant on hard surface and begin CPR
      ▶ First, open the airway and assess for breathing
      ▶ Look in the airway, if a foreign body is visible remove it using a finger sweep
      ▶ Once you have opened the airway, assess for breathing and attempt to ventilate if infant is not spontaneously breathing

Special Considerations

• Infants and children
  • Give two rescue breaths and watch for a rising chest
  • Next begin the steps of CPR, giving 30 continuous compressions and two breaths
    ▶ Look into the airway first for obstruction and remove it if you see it
    ▶ After 2 minutes or about five cycles of 30:2 CPR, activate EMS

Skill 7-8

FBOA (Unconscious Infant)

• Position infant on firm, flat surface
• Open airway using head-tilt/chin-lift or trauma tilt/chin-lift to inspect mouth for foreign object
• If one is visible, use finger sweep to clear it
Skill 7-8
FBOA (Unconscious Infant)

- Open airway and attempt to ventilate
- If attempt fails, reposition head and make another attempt

If ventilation is still unsuccessful, begin CPR by giving 30 compressions.
After each cycle of 30 compressions, perform one extra step by opening infant's airway and looking for FBOA.

Repeat steps 2 and 3 until object is removed.
Ensure EMS has been activated.
If you are alone, activate EMS after five cycles of CPR (about 2 minutes).
Special Considerations

- Mouth-to-stoma ventilation
  - Some patients will have an opening to their airway through the neck
  - To breathe for these patients a seal must be maintained with the surface of neck around the stoma

- Mouth-to-stoma ventilation
  - Place pediatric-sized mask or a barrier device over the stoma
  - Use same techniques as previously described except patient’s nose is not pinched

- Gastric inflation/vomiting
  - Rescue breathing or assisting someone’s ventilations can lead to air being pushed into patient’s stomach, causing it to bulge out
    - This is termed gastric inflation
    - Can cause patient to vomit
Special Considerations

- Gastric inflation/vomiting
  - If you notice gastric inflation, you should do the following:
    - Attempt to reposition the patient’s head to allow air to flow more effectively into the lungs rather than the stomach
    - Make sure breaths are not being delivered too forcefully
    - Be prepared in case patient vomits
    - Never push on an inflated stomach to release air

Special Considerations

- Cricoid pressure
  - Also called the Sellick maneuver
  - Technique used to collapse the esophagus between the trachea and the cervical spine
  - Prevents air from flowing into the stomach when rescue breaths or ventilations are given
  - Once applied it should not be released until the airway is secured with an advanced tube

Special Considerations

- Cricoid pressure
  - To apply cricoid pressure in a nonresponsive patient, do the following:
    - Locate the patient’s Adam’s apple with your index finger
    - Slide your finger down to the base of the Adam’s apple
    - Find the cricoid cartilage, which is the prominent ring at the base of the Adam’s apple
    - Use the tips of your index finger and thumb to apply firm backward pressure on the cricoid cartilage
Special Considerations

O₂ Administration

- EFRs may also be called on to administer O₂ or assist other healthcare providers in providing O₂ or assisting with more advanced airway management
  - It is important to understand the principles behind these techniques to assist others more effectively

O₂ Administration

- O₂ is necessary for life
  - Absence of O₂ will cause certain death within a short time
  - Patients who have certain medical conditions or traumatic injuries may not have sufficient O₂ circulating in their blood to support the body
    - Healthcare providers therefore often provide supplemental O₂
O₂ Administration

- O₂ cylinders
  - O₂ commonly comes in small portable tanks for use by EFRs
    - Larger tanks are mounted in ambulances to provide adequate supply during transport
    - Smaller portable tanks that can be carried to the scene are made of steel or aluminum and are pressurized to approximately 2200 pounds per square inch (psi) when full

- Safety is a concern when using O₂, and the following cautions should be observed:
  - Do not allow any open flames anywhere near O₂ or O₂ equipment
  - Do not allow grease or any other combustible material to touch the valves, fittings, or tanks
  - Use only O₂ tanks, valves, or hoses

- Always secure O₂ equipment to prevent it from becoming damaged
- Always make sure all fittings and hoses are securely fitted
O₂ Administration

Skill 7-9
Preparing an O₂ Cylinder

- Select an O₂ tank
- Remove plastic cap from around the stem of the tank

- Be careful not to lose the O-ring inside the plastic cap
Skill 7-9
Preparing an O₂ Cylinder

- “Crack” the tank open for about 1 second to release any dust or debris and then close it

Skill 7-9
Preparing an O₂ Cylinder

- Fit the O₂ regulator onto the tank
  - Align the fins on the regulator with holes on the tank
  - Ensure O-ring is between tank and regulator
- Tighten regulator to tank

Skill 7-9
Preparing an O₂ Cylinder

- Turn tank on by using tank key and turning in counterclockwise direction
- Listen for leaks and check volume of gauge to see how full tank is
- Attach O₂ tubing or O₂ delivery device
Nonrebreather mask (NRBM)

To apply the NRBM to a patient, do the following:

- Attach it to the tank and turn on the tank
- Adjust the flowmeter to 12-15 LPM
- Place your finger over the one-way valve on the inside of the mask and inflate the reservoir bag fully
- With O₂ flowing, place the mask over the patient’s mouth and nose

To obtain near 100% O₂,, the flow rate must be adjusted to keep the reservoir bag inflated during inspiration.

A pediatric NRBM is used in much the same way except that the flow rate is decreased to keep the reservoir bag inflated only during inhalation.
Nasal cannula
- Used for a patient who cannot tolerate having a mask over his/her face
- Provides approximately 24% to 40% O₂ when administered at 2-6 LPM

To apply the nasal cannula, do the following:
- Attach the tubing to the O₂ tank and turn on the tank
- Adjust the flowmeter to the desired flow rate (2-6 LPM)
- Place the prongs into the patient’s nose and adjust the tubing for comfort
O₂ Administration

Bag-Mask Ventilation

- Bag-mask devices
  - Sometimes referred to as self-inflating bags; they are commonly used in both prehospital and hospital situations when ventilator support (rescue breathing) is needed.

Bag-Mask Ventilation
Bag-Mask Ventilation

- Bag-mask has four major parts
  - The bag itself is a collapsible, soft plastic device
  - Bag-mask valve is a one-way valve
  - The mask, like the pocket, is made up of plastic, with an air-filled cuff
  - The reservoir collects $O_2$ and allows a higher concentration of $O_2$ to be delivered to the patient

Bag-Mask Ventilation

- Bag-mask device
  - Provides more efficient ventilation if two rescuers work together to ventilate the patient
  - As with the pocket-mask, the ventilation rate should be 10-12 breaths per minute or 1 breath every 5-6 seconds
  - If you use the bag-mask device with $O_2$ attached, use a reservoir

Bag-Mask Ventilation

- Bag-mask
  - Advantages to the bag-mask include:
    - Can be used with or without $O_2$
    - Close to 100% $O_2$ concentration when connected to an $O_2$ source and reservoir
    - Minimal risk of body fluid exposure
    - Disposable
    - Inexpensive
Bag-Mask Ventilation

- Bag-mask
  - Disadvantages of the bag-mask device
    - Its large size and the need for two rescuers to adequately ventilate the patient
    - To adequately ventilate a nonbreathing patient when using air without supplemental O₂, 800 mL of air is needed

Advanced Airway Management

- Not typically a part of the EFR’s treatment protocols
  - As members of a team of healthcare providers that may include EMT basics and/or paramedics, EFRs may be called on to assist using these airway management devices

Advanced Airway Management

- Dual lumen airway
  - Advanced airway that is inserted into either the trachea or the esophagus
    - Generally considered only when a patient meets the following conditions:
      - Is unconscious
      - 16 years or older
      - Has an absent gag reflex
      - Is a minimum of 4 feet tall
      - Has apnea or a severely decreased respiratory rate
Advanced Airway Management

- Dual lumen airway
  - Advanced airway that is inserted into either the trachea or the esophagus
  - Do not use if:
    - The patient has an intact gag reflex
    - Is less than 16 years old
    - Is shorter than 4 feet tall
    - Has known esophageal disease
    - Recently ingested caustic substances

- Dual lumen airway
  - Two sizes available
  - To assist with insertion, ensure that you have PPE in place
  - You may provide ventilator support as needed with a bag-mask or pocket-mask while the EMS providers prepare the equipment needed for the procedure

Advanced Airway Management
Advanced Airway Management

- Endotracheal tube
  - Device inserted under direct visualization into the trachea
  - Considered the best method of airway management
    - Procedure commonly known as intubation

Questions?