

Airway Administration

Luke Koester AT, ATC, EMT

The primary function of an airway adjunct is to prevent obstruction of the upper airway by the tongue and allow the passage of air and oxygen to the lungs

Nasopharyngeal Airways (NPA)

- used in an unresponsive patient or a patient with an altered level of consciousness who has an intact gag reflex and is not able to maintain their airway spontaneously
- patients with AMS or who have just had a seizure may also benefit from a NPA

<u>Indications</u>	<u>Contraindications</u>
1. semiconscious or unconscious patients with an intact gag reflex 2. patients who otherwise will not tolerate an OPA	1. Severe head injury with blood draining from the nose 2. History of fractured nasal bone *If the NPA is accidentally pushed through a hole caused by a fracture of the base of the skull (cribriform plate), it may penetrate into the brain

-Inserting a Nasopharyngeal Airway

1. Size the airway by measuring from the tip of the nose to the patient's earlobe
2. Coat the tip with a water-soluble lubricant
3. Insert the NPA into the right nare with the bevel facing the septum
 - a. If there is trauma to the right nare, invert the NPA so the bevel is facing the septum and insert into the left nare
4. Advance the airway until the flange rests against the nostril
 - a. If using the left nare, advance the NPA until resistance is met, then rotate the NPA 180 degrees into position until the flange rests against the nostril

Oropharyngeal Airways (OPA)

- used to keep the tongue from blocking the upper airway
- makes it easier to suction the oropharynx if necessary

<u>Indications</u>	<u>Contraindications</u>
1. Unresponsive patients without a gag reflex (breathing or apneic) 2. Any apneic patient being ventilated with a bag valve mask who does not have an intact gag reflex	1. Conscious patient 2. Any patient (conscious or unconscious) who has an intact gag reflex

-Inserting an Oropharyngeal Airway with 180 Degrees Rotation

1. Size the airway by measuring from the patient's earlobe to the corner of the mouth
2. Open the patient's mouth using the cross finger technique
3. Hold the airway upside down with your other hand, insert the airway with the tip facing the roof of the mouth
4. Progress the airway towards the back of the mouth while rotating the airway 180 degrees
5. Insert the airway until the flange rests on the patients lips and teeth
 - a. Once in position, the OPA will hold the tongue forward

Oropharyngeal Airway (OPA)

-Inserting an Oropharyngeal Airway with 90 Degrees Rotation

1. Size the airway by measuring from the patient's earlobe to the corner of the mouth
2. Using a bite stick (tongue depressor), depress the tongue so that it remains forward
3. Insert the airway at a 90 degree angle from the corner of the mouth, advancing it until the flange reaches the teeth
4. Rotate the OPA 90 degrees as you remove the bite stick, the curve of the OPA should go down the back of the throat
5. The OPA should rest securely in place against the lips and teeth

King L/T Airways

- single lumen airway that is blindly inserted into the esophagus
- consists of a curved tube with ventilation ports located between two inflatable cuffs
- one cuff is designed to seal the esophagus while the other is intended to seal the oropharynx

<u>Indications</u>	<u>Contraindications</u>
1. Apneic patient with no intact gag reflex	1. Patients less than 4 feet tall 2. Conscious patients 3. Patients with intact gag reflex 4. Patients with known esophageal disease

-Inserting a King L/T Airway

1. Size the airway per instructions in packaging
2. Test the cuff to make sure both balloons inflate
3. Apply a water-based lubricant to the beveled distal tip and posterior aspect of the tube
4. Position the head into the sniffing position
5. Insert the King L/T Airway at a 90 degree angle to the mouth, advancing the airway behind the base of the tongue
6. As the airway passes under the tongue, rotate the tube back to midline
7. Advance the airway device until the base of the connector aligns with the teeth or gums
8. Inflate the cuffs using the maximum volume of the syringe provided
9. Attach a BVM, while gently squeezing the BVM, withdraw the airway device until ventilation is easy and free flowing
10. Confirm placement by looking for equal chest rise and fall and auscultation of the lungs
11. Add more air to the cuffs with the syringe if needed to seal off the oropharynx
12. Secure airway device with tape or tube holder

Endotracheal Intubation

- the insertion of a tube into the trachea to maintain the airway
- indicated for patients who cannot protect their own airway or for patients who need prolonged artificial ventilation

<u>Indications</u>	<u>Contraindications</u>
1. Cardiac arrest 2. Respiratory arrest 3. Inability of a conscious patient to adequately oxygenate 4. Inability of a patient to protect their airway (GCS <9) 5. Inability to ventilate an unconscious patient with conventional methods	1. Patient with an intact gag reflex 2. Any situation where the pharynx is obstructed (pharyngeal foreign body, swelling of the pharynx) or serious maxillofacial trauma 3. Special care with possible C-spine injury, use the jaw thrust maneuver with in-line immobilization

-Performing Endotracheal Intubation

1. Open and clear the airway, insert an OPA and oxygenate with a BVM
2. Assemble and test the intubation equipment
3. Position the patients head, remove the OPA
4. Use the laryngoscope to move the tongue in an up and leftward direction
 - a. Do not use the laryngoscope to pry as you may fracture teeth
5. Visualize the vocal cords and watch the endotracheal (ET) tube pass between them
6. Remove the laryngoscope
7. Inflate the balloon cuff with 5-10 mL of air and remove the syringe
8. Ventilate the patient to confirm placement
9. Secure the tube with a tube holder or tape

References

1. Barnes, L., Gulli, B., Ciatolla, J.A., & American Academy of Orthopaedic Surgeons. (2002). *Emergency care and transportation of the sick and injured*. Sudbury, MA: Jones and Bartlett.
2. King Systems, N. (2014). *King Airway Device Instructions For Use*. Nobelsville, IN.
3. Cashio, R, & Hymel, P. (2002). *The LSUHSC New Orleans Emergency Medicine Interest Group Presents The Student Procedure Manual Endotracheal Intubation*