

With a Little Help From My Friends, Part 1

Airway Adjuncts and Therapy

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Risk of Difficult Airway

- Smaller caliber airway
- Tongue is larger in ratio to the oropharynx
- Larynx is more anteriorly located
- Epiglottis is long, narrow, and floppy



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Unfamiliar Airway

- Discomfort secondary to dealing with age and size
- Discomfort secondary to infrequency of patient encounters

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Airway Adjuncts and Therapy



- Oral Airways
- Nasopharyngeal Airways
- Laryngeal Mask Airway (LMA)
- Heated Humidified High Flow Nasal Cannula
- Heliox
- Continuous Positive Airway Pressure
- Racemic Epinephrine

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Oral Airways

- Select the proper size airway by measuring from the tip of the patient's earlobe to the tip of the patient's nose.

Premature	3-5 kg	6-9 kg	10-18 kg
30 mm	40 mm	50 mm	60 mm
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Oral Airways

- Insert the OP airway without pushing the tongue back. Put the OP airway in the mouth upside down so the tip of the device is facing the roof of the mouth. As the device is inserted, rotate 180 degrees until the flange comes to rest on the lips.
- *Using a tongue blade to press down on the tongue, insert the OP airway with the curve facing down following the natural curve of the throat.

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Nasopharyngeal Airways

- The length is determined by measuring the distance from the lateral aspect of the nose to the tragus of the ear on the same side
- The length is more important than the diameter!
- Endotracheal Tube * CPAP

Newborn	0-6	6-12
12fr	14fr	16fr

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Nasopharyngeal Airways



- Insert the airway posteriorly (not cephalad) parallel to the floor of the nasal cavity, with the bevel of the tip facing toward the nasal septum.

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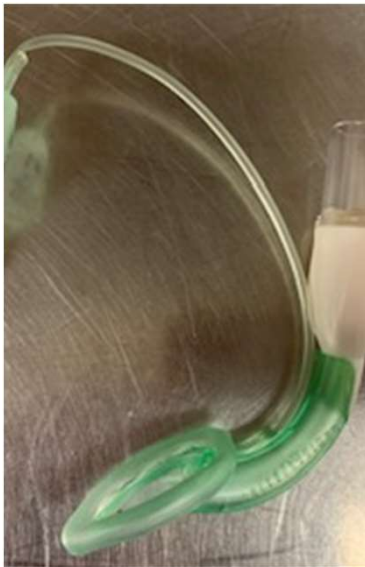
LMA's

Laryngeal Mask Airway

- Different types of LMA's, **Know your LMA!**
 - LMA's
 - Intubating LMA's (Fiberoptic)
 - LMA's with gastric tubes
 - Leak at different pressure with positive pressure ventilation (PPV)
- Different Brands
 - **LMA**, i-gel, **Ambu Aura**, Air-Q, Shiley



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LMA's

- Appropriate Size
 - Weight range on the package
- Ambu Aura-I
 - #1 <5kg 4ml
 - #1 ½ 5-10kg 7ml

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LMA's

- Open the airway
- Laryngeal surface directed downward
- Press the device on to the hard palate and advance
- Inflate the LMA

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LMA's

- Provide Positive pressure Ventilation
- ETCO₂
- Mechanical Ventilation
- Not a definitive airway

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HHFNC

Heated Humidified High Flow Nasal Cannula

- Special equipment
- Humidification



HHFNC

- Continuous flow of fresh gas (higher oxygen concentration)
- Washes out dead-space (the exhaled gas high in CO₂)
- ↑ Functional Residual capacity (FRC)
- Provides CPAP?
- 2-6 lpm



Heliox

- Helium (0.18g/L) & Oxygen (1.42 g/L) mixture 70/30 & 80/20
- Heliox has a lower density than oxygen (0.492 g/L)

Heliox

- Decrease turbulent flow
- Greater flow for a given pressure
- Decrease work of breathing

CPAP

Continuous Positive Airway Pressure

- Increase FRC
- Decrease intrapulmonary shunting
- Stabilize the chest wall
- Stabilize the upper airway

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CPAP

- Proper patient
 - Effective Respiratory Drive
- Proper interface
 - Proper prong size
 - Keeping pressure off the septum

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Racemic Epinephrine

- Acts on vascular smooth muscle to produce vasoconstriction
- Shrinks upper respiratory mucosa



Side Effects of Racemic Epinephrine

- Rebound Swelling
- Tachycardia
- Hyperglycemia
- Hyperkalemia
- Hypertension

Airway Adjuncts and Therapy

- Remember the option of Airway Adjuncts
- Be familiar with the Equipment
- Know the Therapies

Questions? scmay@cmh.edu