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Tahoe Refresher 2011

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AirwayP11 for BLS and ILS Providers

BUT FIRST...

- Most patients don't need airway management
- Not all patients that need airway management need intubation
- Not all patients that need intubation need RSI

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AIRWAY MANAGEMENT SPECTRUM

- Position of comfort
- Turning a kid upside down
- Repositioning the airway
- Oral and nasopharyngeal airways
- CPAP
- BVM ventilation
- Intubation without meds
- Nasal intubation
- Awake intubation
- Drug-facilitated intubation

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Remember...

- Basics save more lives than ANY advanced airway procedure
- The basics will get you and your patient out of trouble

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Scope of Practice Comparisons

<ul style="list-style-type: none">□ BLS/ILS<ul style="list-style-type: none">□ Basic airway mgmt□ Basic airway adjuncts□ Suctioning□ Obstructed airway mgmt□ Mechanical PPV<ul style="list-style-type: none">■ Includes CPAP■ Includes ventilator□ Extraglottic airways	<ul style="list-style-type: none">□ Paramedics<ul style="list-style-type: none">□ Endotracheal intubation□ Surgical Airways
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Outline

- Oxygen
- Optimal BVMV
- Extraglottic airways
- CPAP
- Assisting with intubation, RSI and RSA

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OXYGEN




- ### Supplemental oxygen
- Relative contraindications
 - CO₂/CO₂ retainers
 - Absolute contraindications
 - NONE!
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- ### Supplemental Oxygen
- Percentage of oxygen delivered
 - Room air 21%
 - Mouth to mouth 16%
 - Nasal cannula 4 L 40%
 - Non-rebreather @ 10 - 15 L 80%
 - BVM/reservoir @ 10 - 15 L 100%
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- ### Assisted Ventilation
- Indications
 - Inadequate respiratory effort
 - Rate
 - Depth
 - Techniques
 - Mouth to mouth
 - Mouth to mask
 - Bag Valve Mask
-
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- ### Assisted Respirations
- Not well tolerated especially if hypoxic!
 - This is wear you earn your money...or not ☹
 - Expeltes procedure
 - Be gentle
 - Low pressure
 - Avoid tight grip
 - Ventilate when they ventilate
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Oxygen-powered Devices



- Can you stay...
 - Pneumothorax?
 - Stomach full of air?
 - Regurgitation?
- Make them go away!

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Bag-valve-mask (BVM)



- Advantages
 - Higher FiO2
 - May support respirations
- Disadvantages
 - Technically difficult (esp. one person)
 - Not well tolerated if conscious
 - Gastric insufflation => aspiration


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OPTIMAL BVMV

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Rule of Three's


- Three people
- Three Airways
- Three Fingers
- Three Inches
- Three Seconds
- Three PSI
- Three of PEEP



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Three People

- One for a good mask seal
- One to squeeze the bag
- One to do cricoid pressure



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Mask seal techniques

E-C	T-E
	

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Three Airways: OPA + 2 NPA

- Nasal airway better tolerated
 - not completely unconscious
 - may gag reflex
- Oral airway facilitates suction
 - If they'll let you put it in they need it
- Adults only!


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Three Fingers

- AKA "Sellick's Maneuver"
- Purpose
 - Prevent gastric insufflation and aspiration
- What it is not
 - A means to improve laryngeal view
 - OFTEN MAKES VIEW WORSE

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Cricoid Pressure



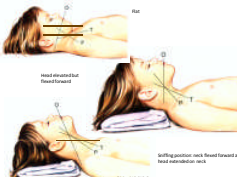
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Three Inches = Head Elevation

- Sniffing position
- Ramped Position

Ear and sternal notch at same level

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Head in line with neck and chest

Sniffing position: neck flexed forward and head abducted to neck

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Ramped Position



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Three Seconds

- Slow ventilation
- Lots of time for exhalation
- "Squeeze - Release - Release"

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Three PSI

- Not REAL pounds per square inch!
- Minimum pressure for chest rise

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Three of PEEP


- Positive end-expiratory pressure



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Rule of Three's

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
EXTRAGLOTTIC AIRWAYS

Extraglottic airways

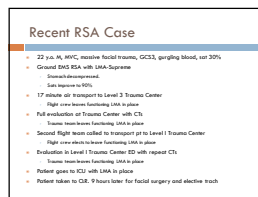
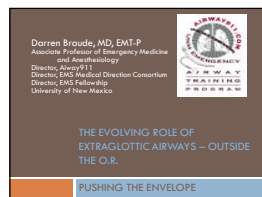
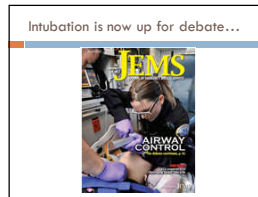
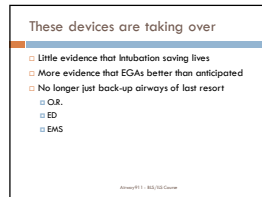
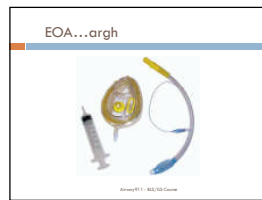
- Extra = outside
- Glottis = vocal cords



- Supraglottic
- Retroglottic




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What is CPAP?

- CPAP stands for:
 - Continuous Positive Airway Pressure
- In the most basic sense:
 - CPAP provides pressure to aid in the movement of oxygen into the lungs
 - CPAP provides pressure the patient breathes against on exhalation.



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What is CPAP

- **NON-INVASIVE POSITIVE PRESSURE VENTILATION**
- Effective way to treat respiratory distress from many causes
- Effective mechanism to deliver meds

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The Physiology of CPAP

- Decreases WOB and anxiety
 - Easier inhalation
 - Less hypoxemia
- Opens and keeps open small air sacs in lungs
- Forces fluid out of the alveolar space
- Pushes oxygen-rich air into the lungs
- Increases tidal volume and residual capacity

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CPAP vs. PEEP

- What is PEEP?
 - Positive end expiratory pressure
 - Pursed-lip breathing
- Vs. CPAP
 - Dog analogy



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Indications

- Pulmonary edema – any cause
 - CHF
 - Near-drowning
 - Pneumonia
 - COPD/Asthma
- Patients that are cooperative and able to manage own secretions

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Contraindications

- Patient unable to cooperate/understand
- Patient unable to manage own secretions
- Facial trauma/facial hair
- Hypotension
 - Increased pressure in chest decreased return of venous blood to heart.

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CPAP is the Bomb!

- CPAP is well tolerated and relatively safe and improves oxygenation.
- Decreases the need for intubation.
- Usually results in fewer complications, shorter hospital stays, and consequently, lower mortality rates and costs of care.

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