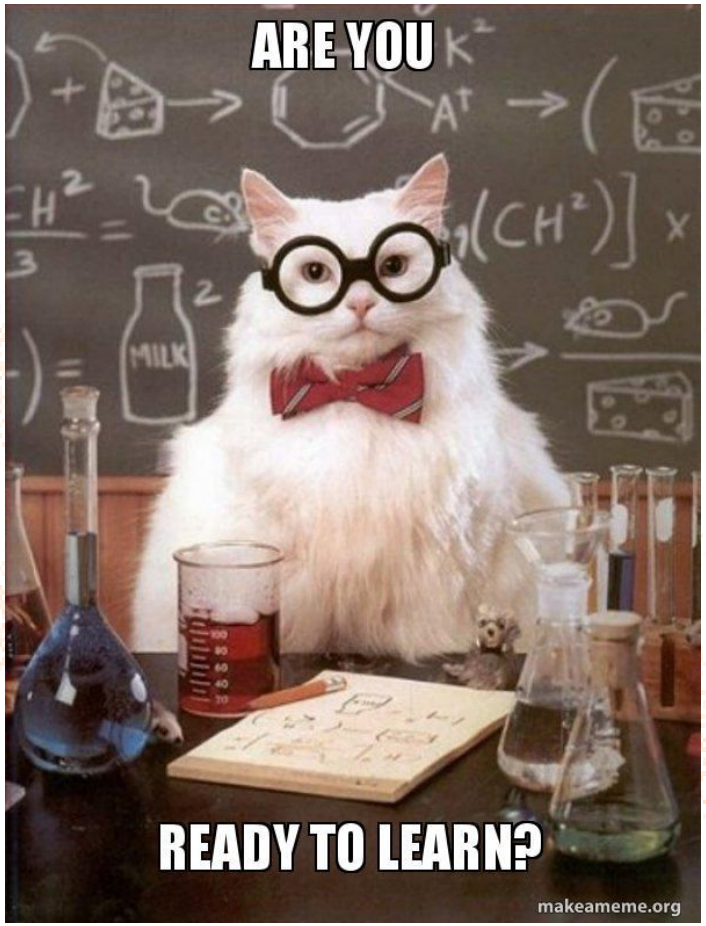
RESPIRATORY CARE FOR NURSING

CREATED BY BC CHILDREN'S MEDICINE INPATIENT CNE'S & CRITICAL CARE RRT

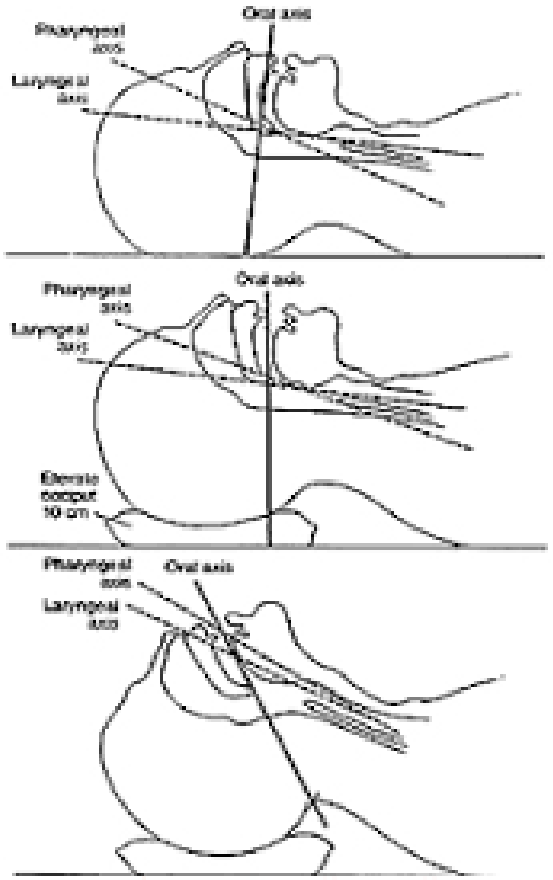
MAY 2023

LEARNING OBJECTIVES

- Positioning
- Pharyngeal Suctioning
- High Flow Oxygen Therapy
- Emergency Management
- Charting in CST



POSITIONING



Sniffing Position

- Varies based on age/size
- Want to optimize oral, pharyngeal and tracheal axis

POSITIONING

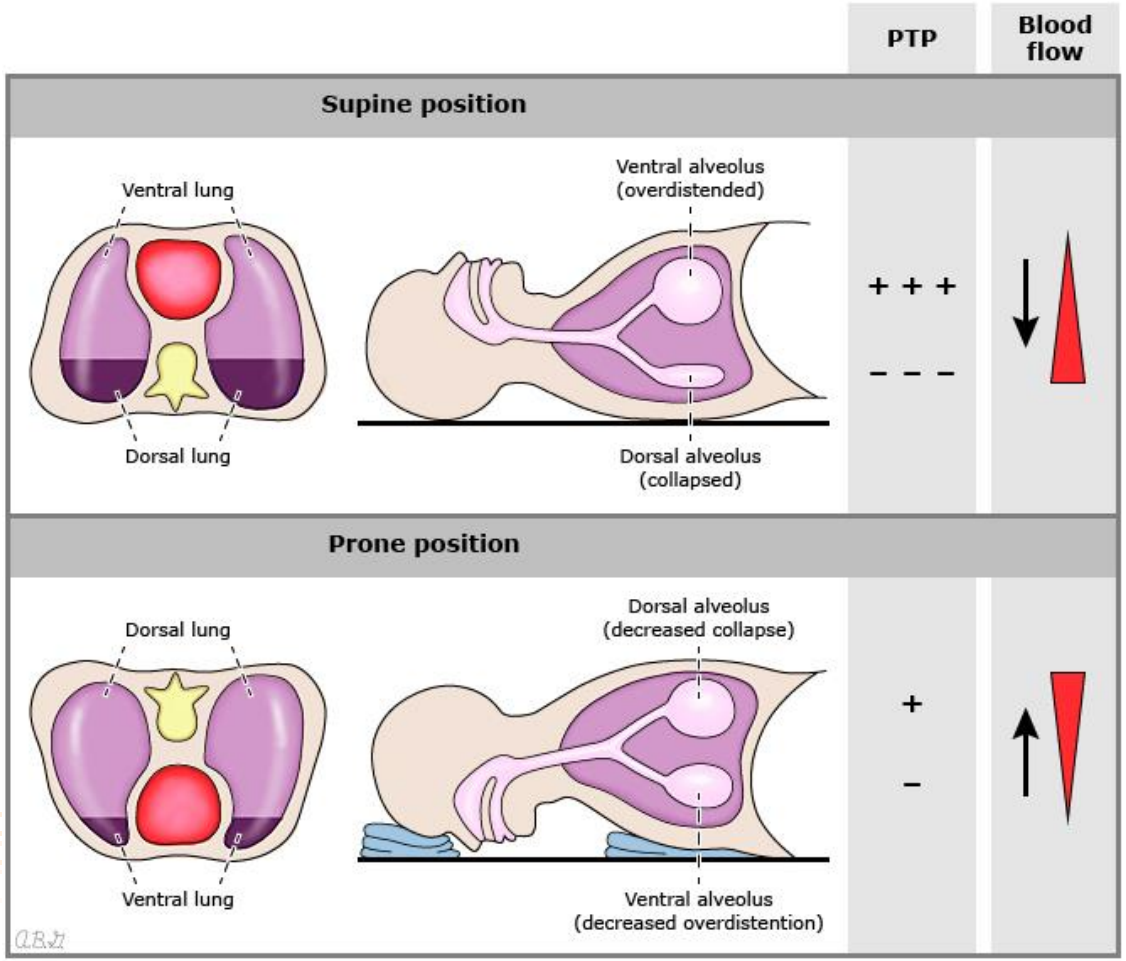
Prone/Semi-Prone

Side-to-Side

POSITIONING

Prone

- Improves ventilation-perfusion ratio



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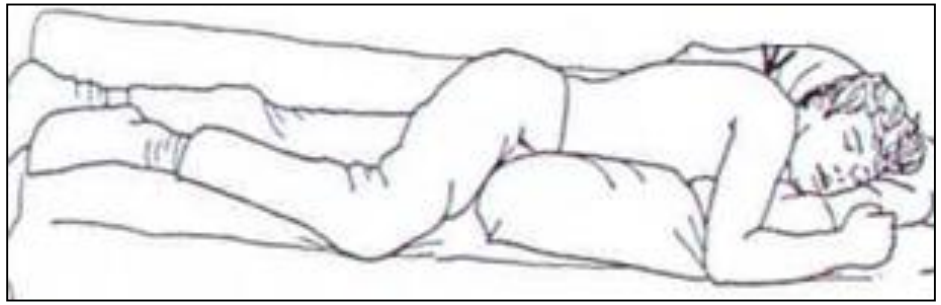


Upper Airway Drainage

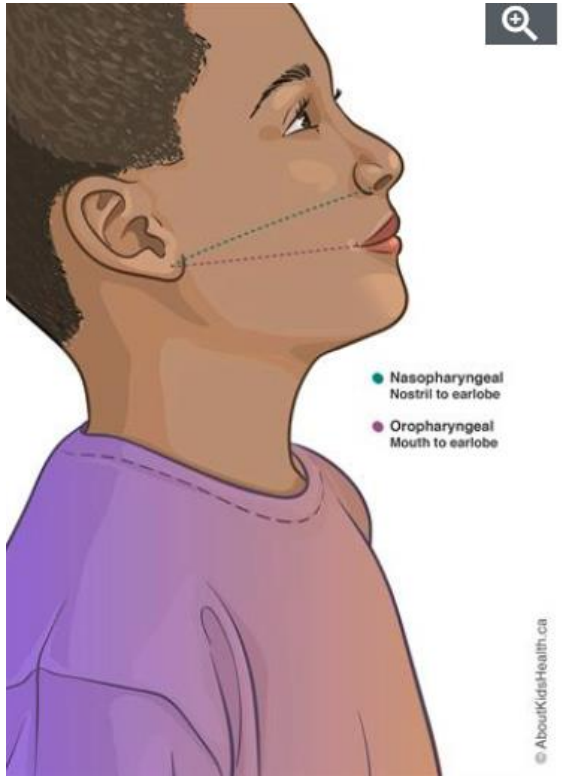
- The best positioning to assist with draining the upper airway is ¾ prone with the child's head turned to the side which will assist with draining secretions out through the mouth
- You can then turn the child from right to left when you need to reposition

Hilda Perry, Physiotherapist (2016)

QUESTION

How do we measure the suction catheter depth for nasopharyngeal and oropharyngeal suctioning?

PHARYNGEAL SUCTIONING



Nasopharyngeal Measurement:

- **Measure distance from nare to earlobe**

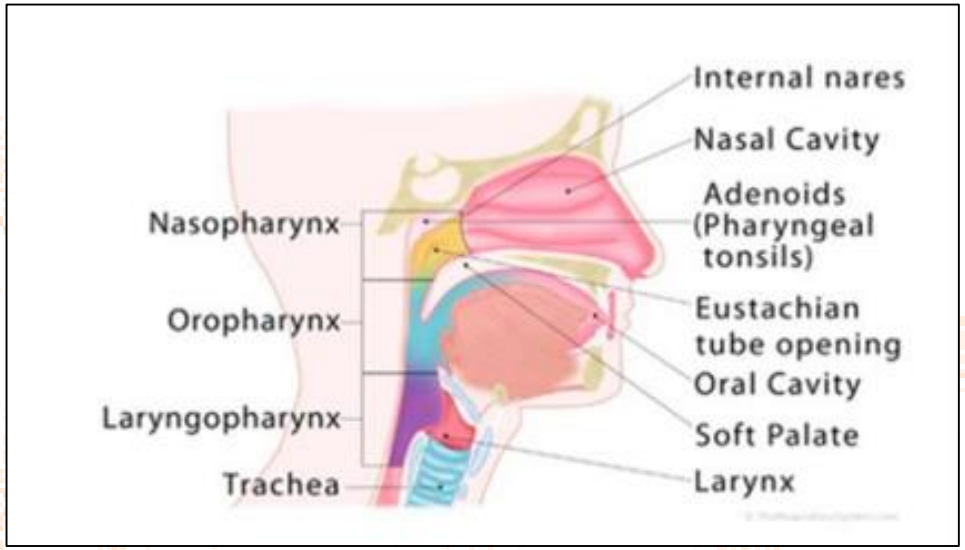
Oropharyngeal Measurement:

- **Measure distance from corner of mouth to earlobe**

PHARYNGEAL SUCTIONING

Steps:

1. Select appropriate suction catheter size
2. Position the patient
3. Pre-measure your suction depth
4. Insert suction catheter orally or nasally
5. Do NOT apply suction during insertion
6. Apply continuous suction by occluding the open port
7. Suctioning should be no longer than 5-10 sec
8. Use sterile water to clear suction catheter



QUESTION

What are some signs that a patient may need suctioning? What are some side effects and contraindications to pharyngeal suctioning?

HIGH FLOW OXYGEN THERAPY

What is High Flow?

- Flow rate meets or exceeds inspiratory demand
- Heated & humidified gas
- Blended gas that can deliver a set FiO2 (Fraction of inspired oxygen)

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Guarantees oxygen delivery up to100%

QUESTION

What are some indications for high flow oxygen therapy?

INDICATIONS

- Respiratory distress from :
  - Pneumonia
  - Bronchiolitis (ie. RSV)
  - Asthma
  - Chronic lung disease
  - Congestive heart failure or congenital heart disease
- Optimize patient comfort
- Bridge from invasive or non-invasive ventilation
- To maintain functional residual capacity without the full support of ventilation

HIGH FLOW OXYGEN THERAPY

Contraindications

- Pneumothorax or air leaks
- Excessive nasal secretions or severe rhinitis
- Upper GI bleed
- Gastric or esophageal surgery
- Inability to maintain airway
- Bilateral choanal atresia
- Recent facial trauma or surgery

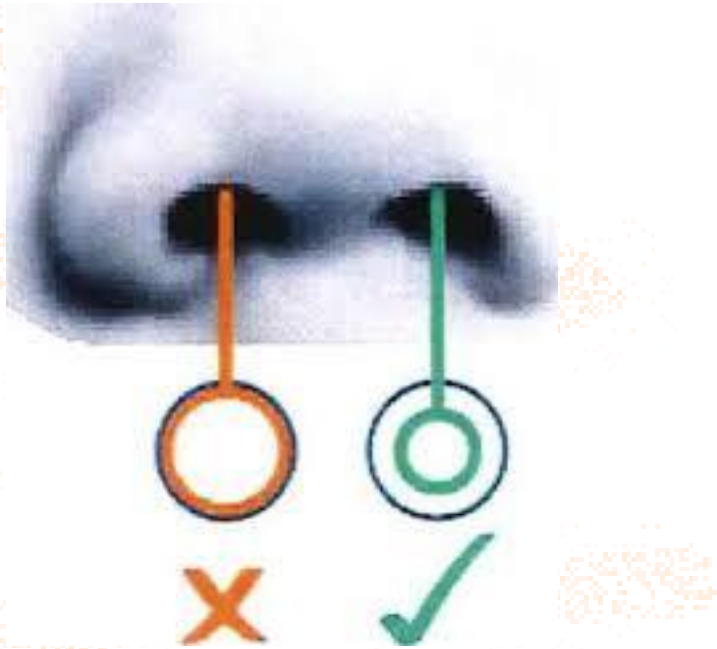
HIGH FLOW OXYGEN THERAPY

Nasal Prongs

- Come in various sizes
- Sizing based on nare size and flow rate

HIGH FLOW OXYGEN THERAPY

- Should not occlude >50% of nare



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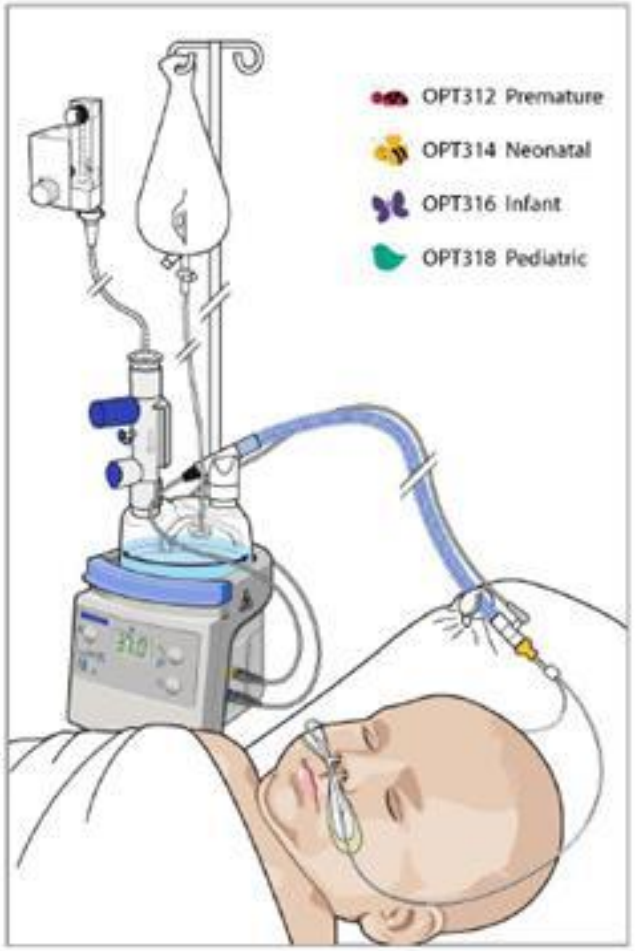
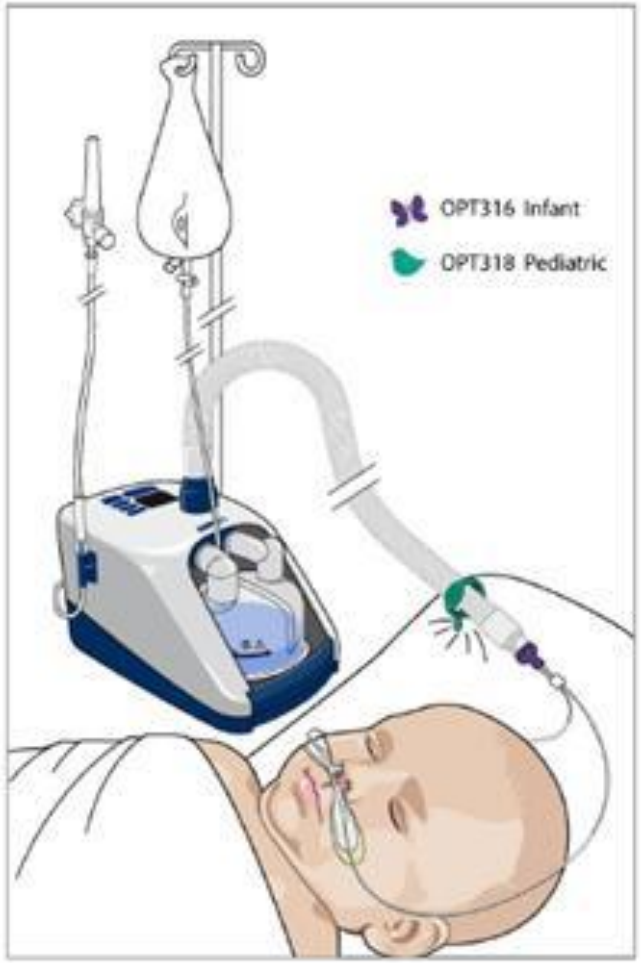


Optiflow

- Uses a blender to set FiO2
- Uses a flowmeter to set flow
- Connected to an air and oxygen source
- Needs an external oxygen analyzer to monitor FiO2
- Works with all nasal prong sizes

HIGH FLOW OXYGEN THERAPY



Airvo

- Oxygen delivered by a flowmeter
- FiO2 is not set, instead the flowmeter is titrated to target a desired FiO2
- Has an internal oxygen analyzer
- Can operate on battery
- Cannot be used to premature or neonatal sized prongs

EMERGENCY MANAGEMENT

Ambu Bagger

- PEEP Valve: Set to 5 cmH2O
- Squeeze until you see adequate chest rise
- Pressures >25 – 30cmH2O cause:
  - Lung injury (barotrauma and volutrauma)
  - Gastric distension (esophageal sphincter opening pressure)

Bagger Volumes:
Neonatal: 150 – 200mL
Pediatric: 450 – 500mL
Adult: 1000mL

QUESTION

When bagging, how often should you deliver a breath to the patient?

EMERGENCY MANAGEMENT

OPAs & NPAs

- **Oropharyngeal Airway** & **Nasopharyngeal Airway**
- Used to relieve obstruction caused by upper anatomy tissue
- Must use appropriately sized device