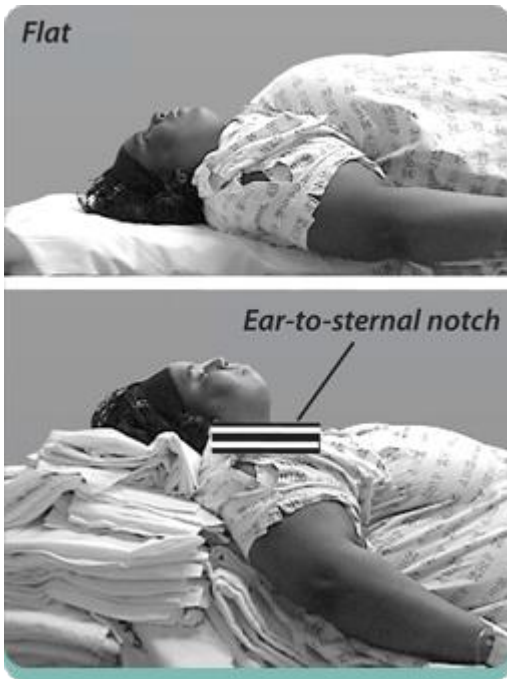


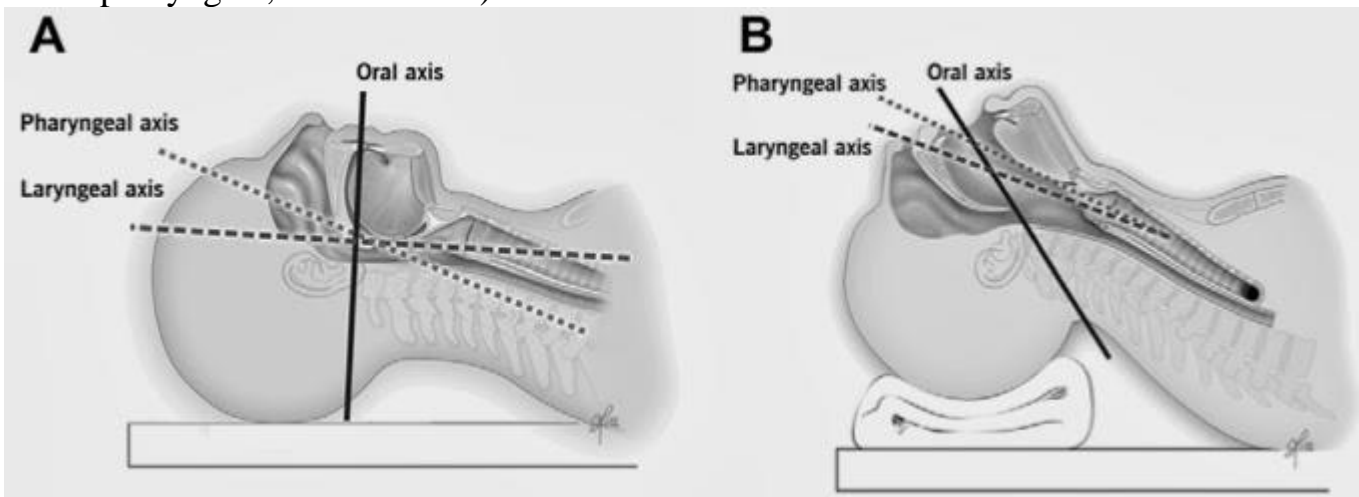
# Techniques to Maximize Success with Difficult Airways

## 1. Optimize thy first attempt

- a. Preoxygenation (increase apnea time) – 2 person BVM
- b. Patient positioning – reverse trendelenberg/ramp technique
  - 1) To Maximize ventilation/preoxygenation and intubation
  - 2) Specifically think for obese patient, pregnant
  - 3) Align the ear to sternal notch

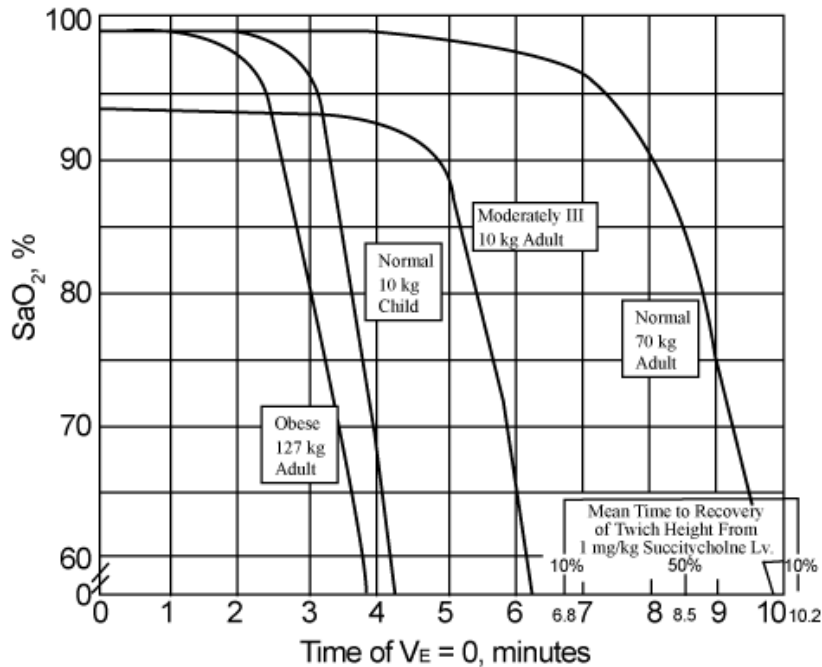


- c. Patient positioning – “sniffing position” and elevating the head (helps align the oral, pharyngeal, tracheal axis)



- d. Use apneic oxygenation (high flow O<sub>2</sub> via NC during intubation) to increase apnea time

TIME TO HEMOGLOBIN DESATURATION WITH INITIAL  $F_A O_2 = 0.87$



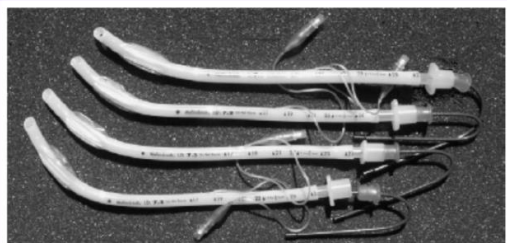
2. Use cheek retraction to increase field of view for direct laryngoscopy
3. Use bimanual laryngoscopy to help optimize your view of the larynx (especially with an anterior airway)



4. Shape your ETT in a hockey stick configuration
  - Straight to cuff with an angle of 35 degrees or less to optimize placement (Levitan AEM 2006)

Stylet Bend Angles and Tracheal Tube Passage Using a Straight-to-cuff Shape

- Levitan *Academic Emergency Med* 2006
- Straight-to-cuff previously shown to trump curved
  - Only remaining question: optimal angle



**Figure 1.** Straight-to-cuff tracheal tubes with stylet bend angles of 25°, 35°, 45°, and 60° (from top to bottom). The

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5. Abandon BURP (Backward Upward Rightward Pressure of Larynx – it worsens view 35% of the time)

**How often did pressing on the neck make the view worse?**

- Bimanual: 4% of the time
- Sellick: 29% of the time
- BURP: 35% of the time

Levitan, Annals of EM 2006

6. Abandon Cricoid/Sellick if it worsens view of the patient
7. Use your Mac and Miller and MAC blade/function as they are intended

8. Consider changing blade if you are having difficulty
9. If all you see is pink, withdraw slowly (may be in too deep past the laryngeal inlet)
10. For the patient with excessive secretions, push slightly on chest (creates bubbles/helps identify glottis if excessive secretions)
11. Check if Miller blade off midline of epiglottis
12. Use eye dominance (Laryngoscopy is a monocular procedure at level of larynx – look down your dominant eye)