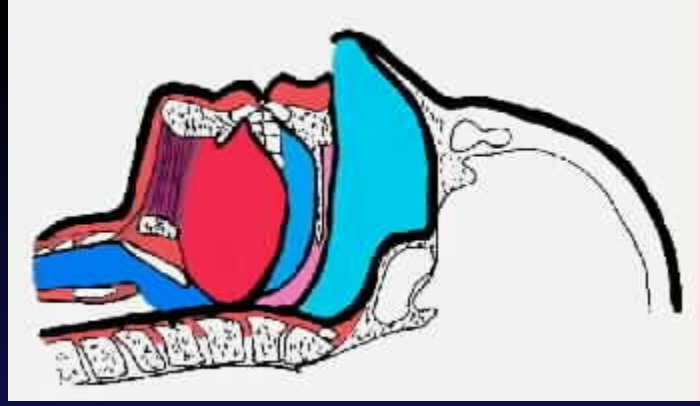


Airway Management

L.Dadák, ARK FNUSA

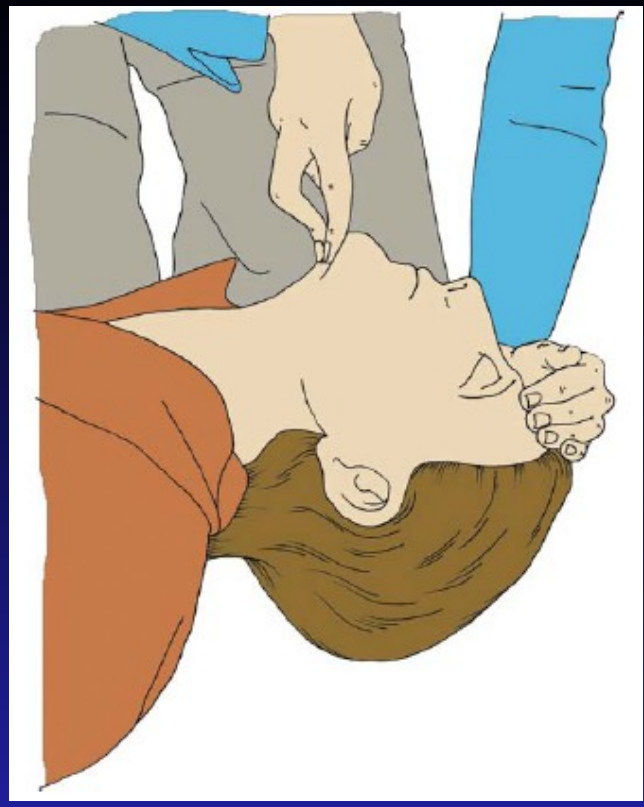
Maintaining airway

- Noninvasive
  - airway
  - laryngeal mask
  - combitube
- invasive
  - OTI, NTI
  - coniotomy
  - tracheotomy

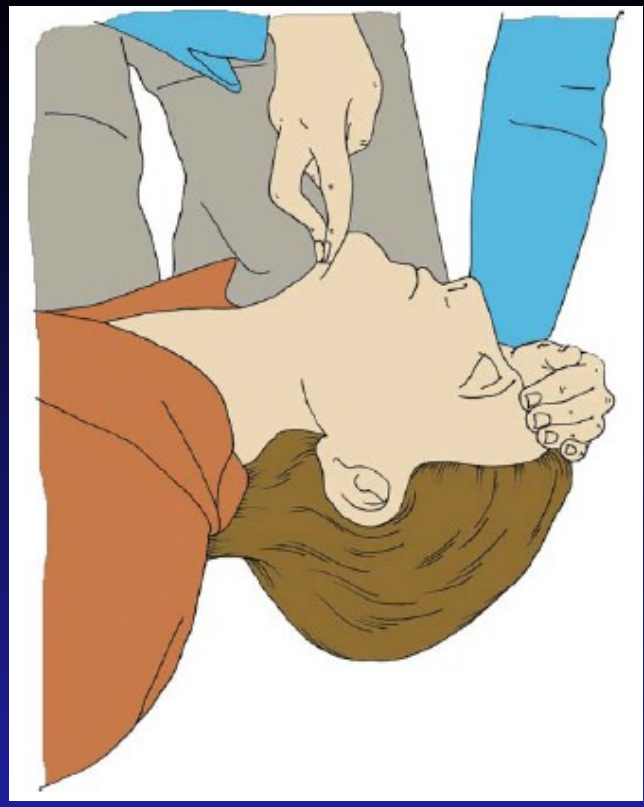
vocal cords

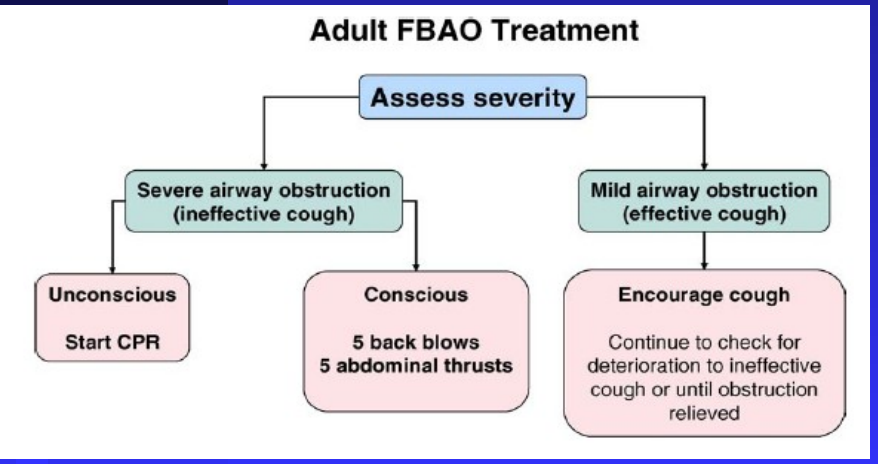
First Aid - repetition

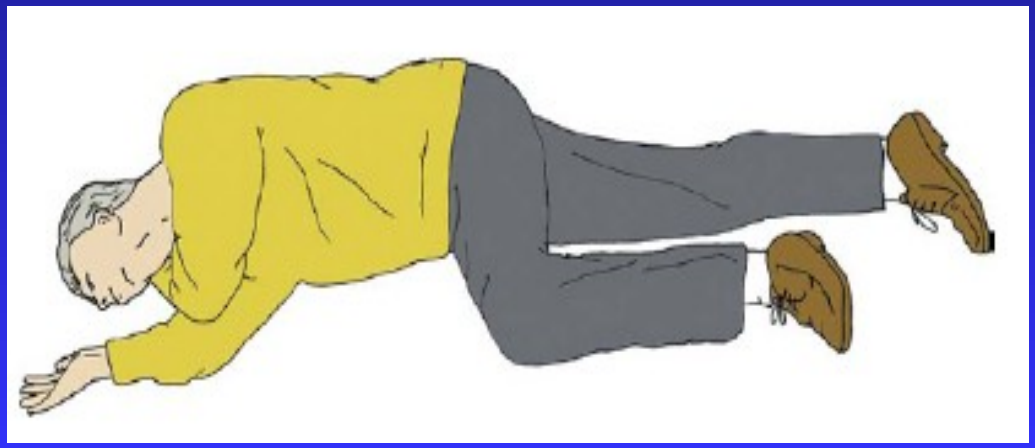
- FBAO



First Aid - repetition



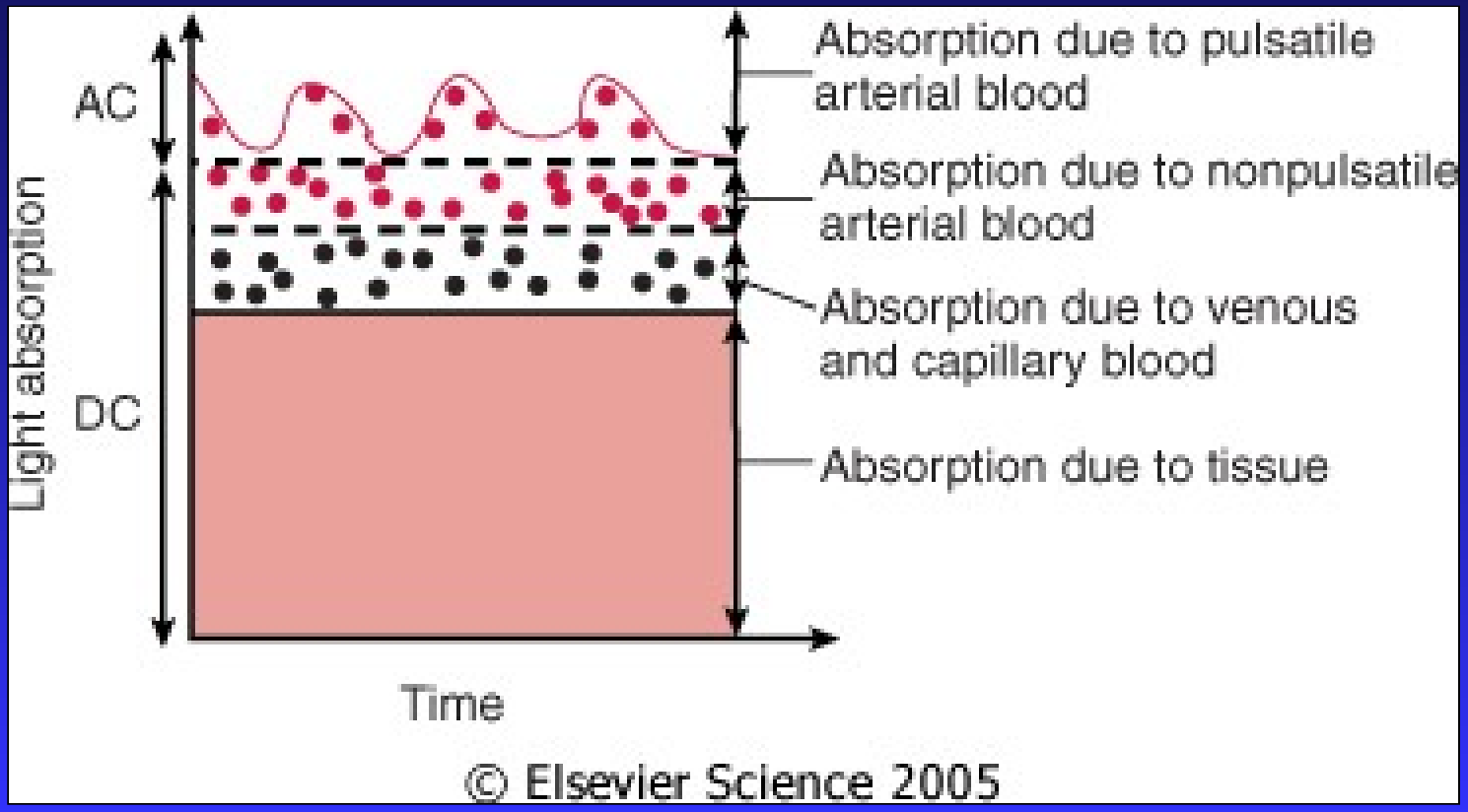




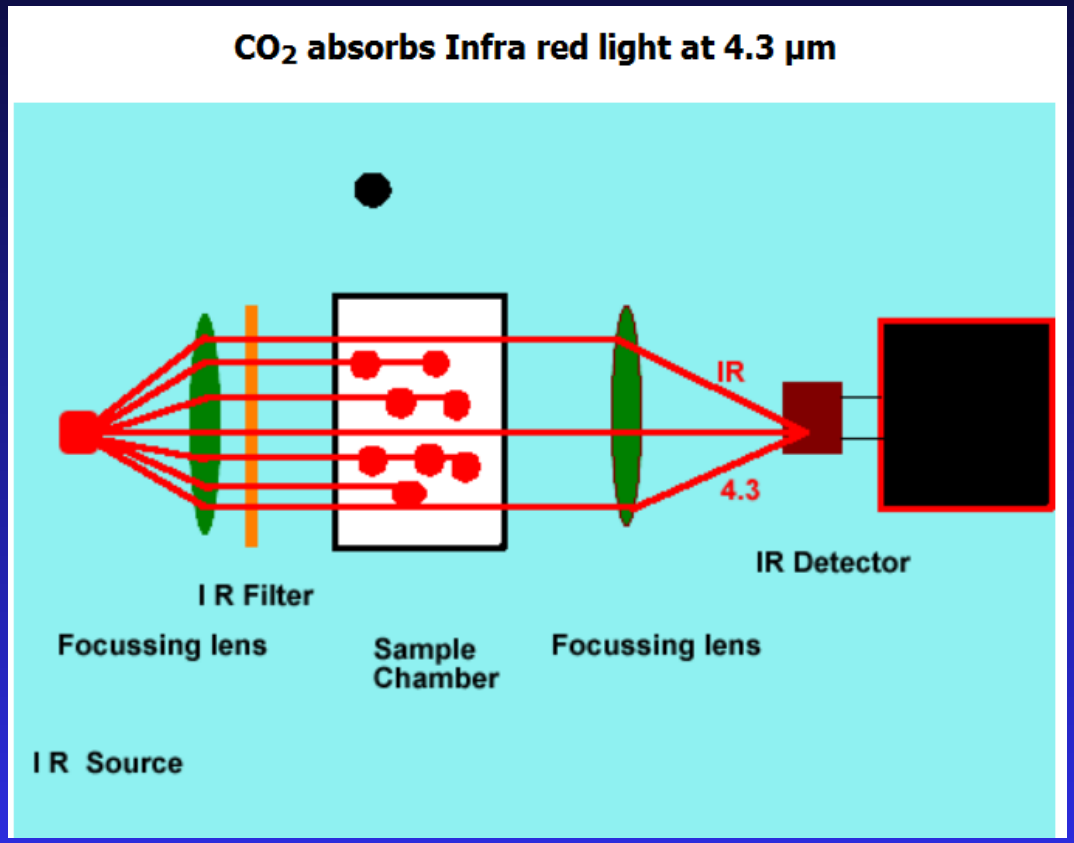
Monitoring of breathing

- Auscultation lung + neck
- SpO2
- capnography / capnometry
- (arterial) blood gasses = Astrup

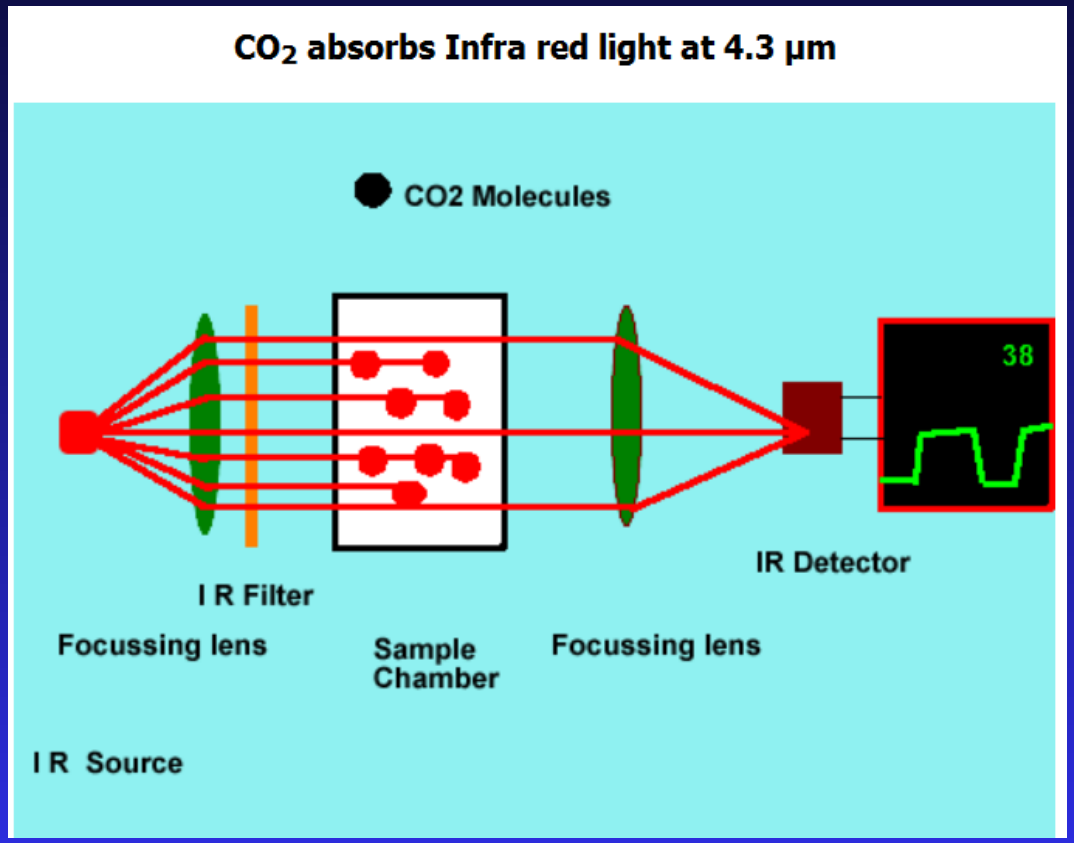
SpO2 > 90%


AC
DC
Light absorption
Time
Absorption due to pulsatile arterial blood
Absorption due to nonpulsatile arterial blood
Absorption due to venous and capillary blood
Absorption due to tissue
© Elsevier Science 2005

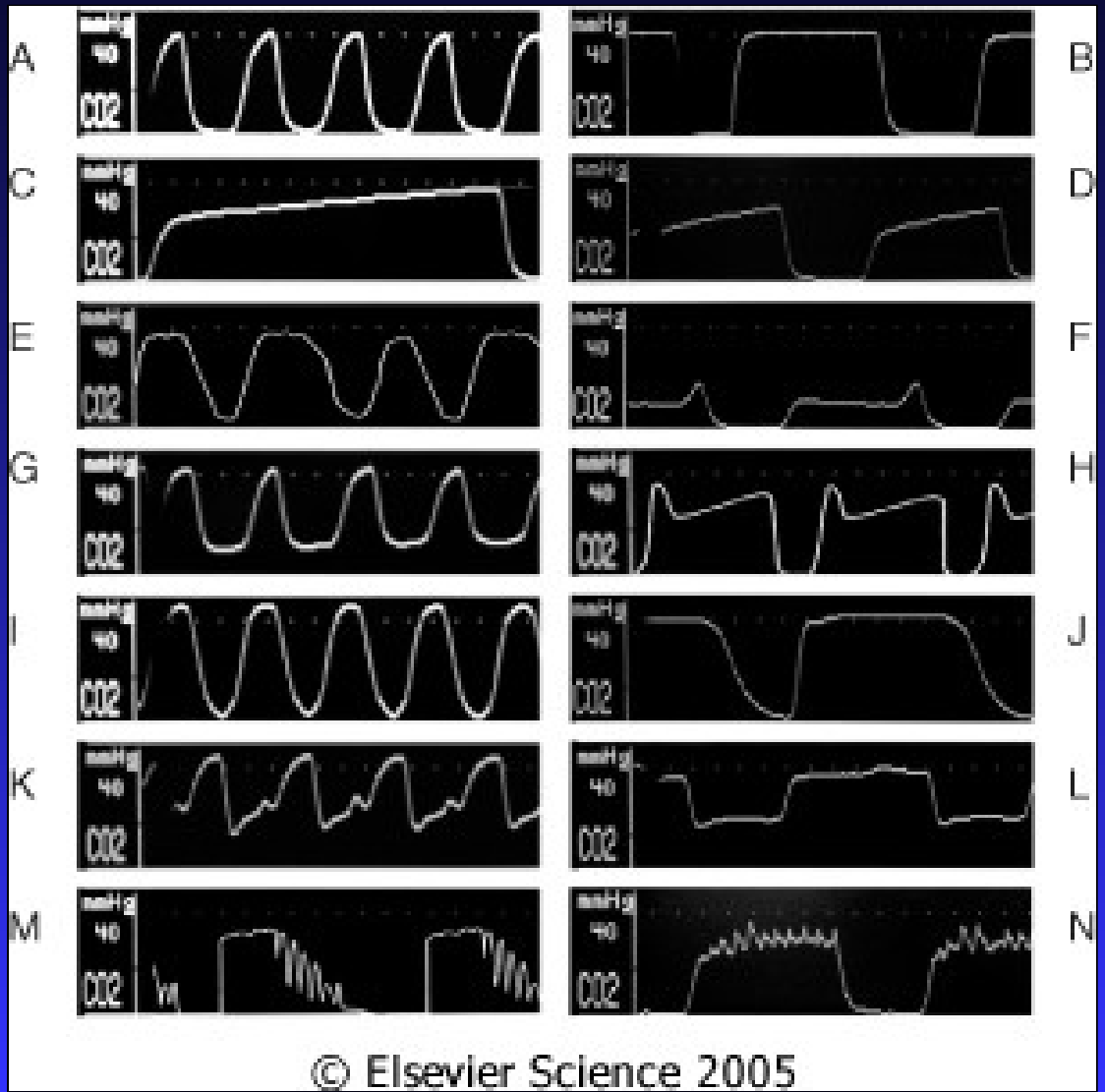
CO2


CO_2 absorbs Infra red light at 4.3 µm
IR
4.3
IR Detector
I R Filter
Focussing lens
Sample Chamber
Focussing lens
I R Source

CO2


CO_2 absorbs Infra red light at 4.3 µm
CO2 Molecules
38
IR Detector
I R Filter
Focussing lens
Sample Chamber
Focussing lens
I R Source

Kapnograf



Bag Mask ventilation

I: apnea, respiratory failure

- positive pressure ventilation

Tidal Volume = 6ml/kg = movements of Chest

f 10.. 30 /min

21.. 100% O2

1 hand:

4 hands

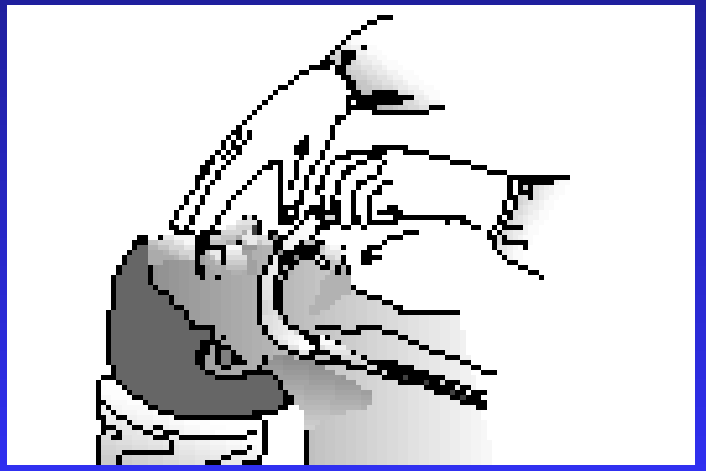
OroPharyngealAirway

I: unconsciousness
+ airway obstruction with tongue

Correct size OPA:
distance angle of mouth --- ear

Risk in mild unconsciousness:
vomitus + aspiration

LM



LM

placed against glottis (radix of tongue, recessus piriformis, esophageal superior sphincter)

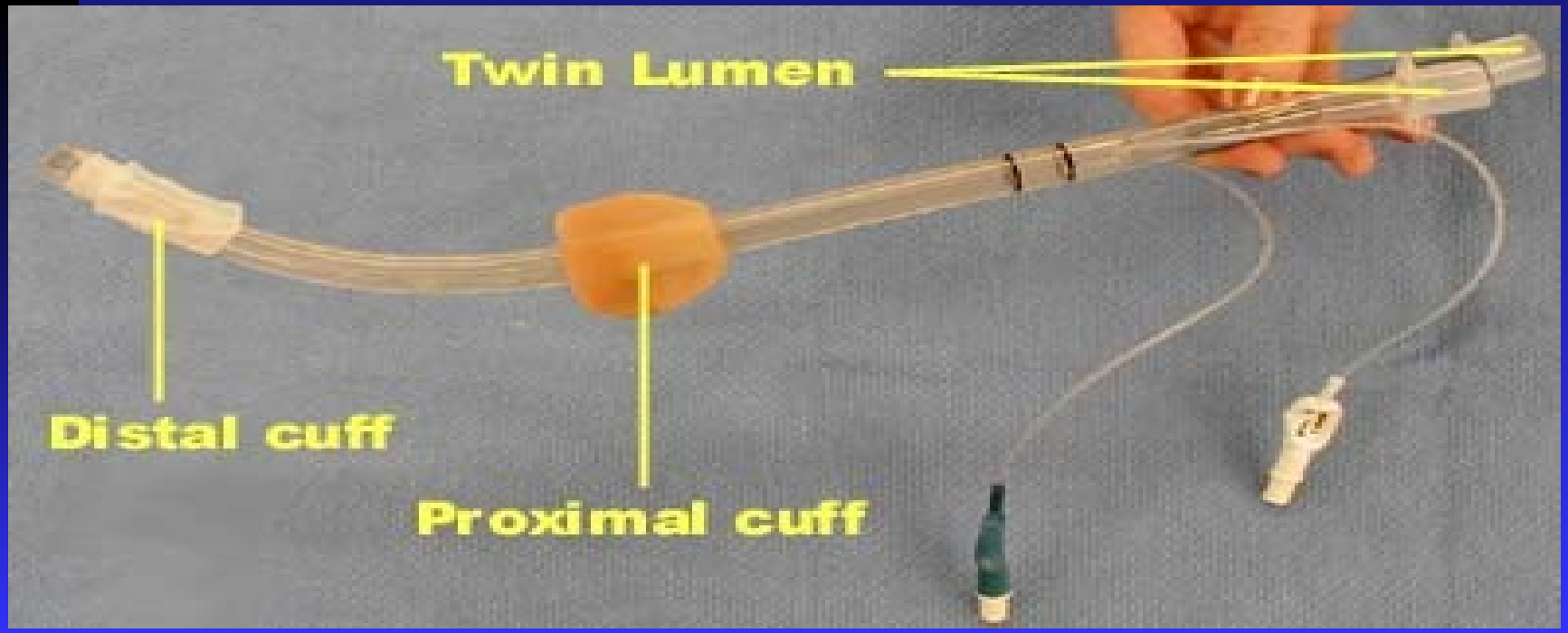
I: instead face mask, OTI, difficult airway

KI:

- full stomach
- gastro-oesophageal reflux,
- high inspiratory pressure
- longer operation

Combitube

- emergency situations instead OTI
- I: difficult airway
- KI: stenosing process in pharynx / trachea



Tracheal intubation

Def: Placing tube to trachea through mouth/nose and larynx.

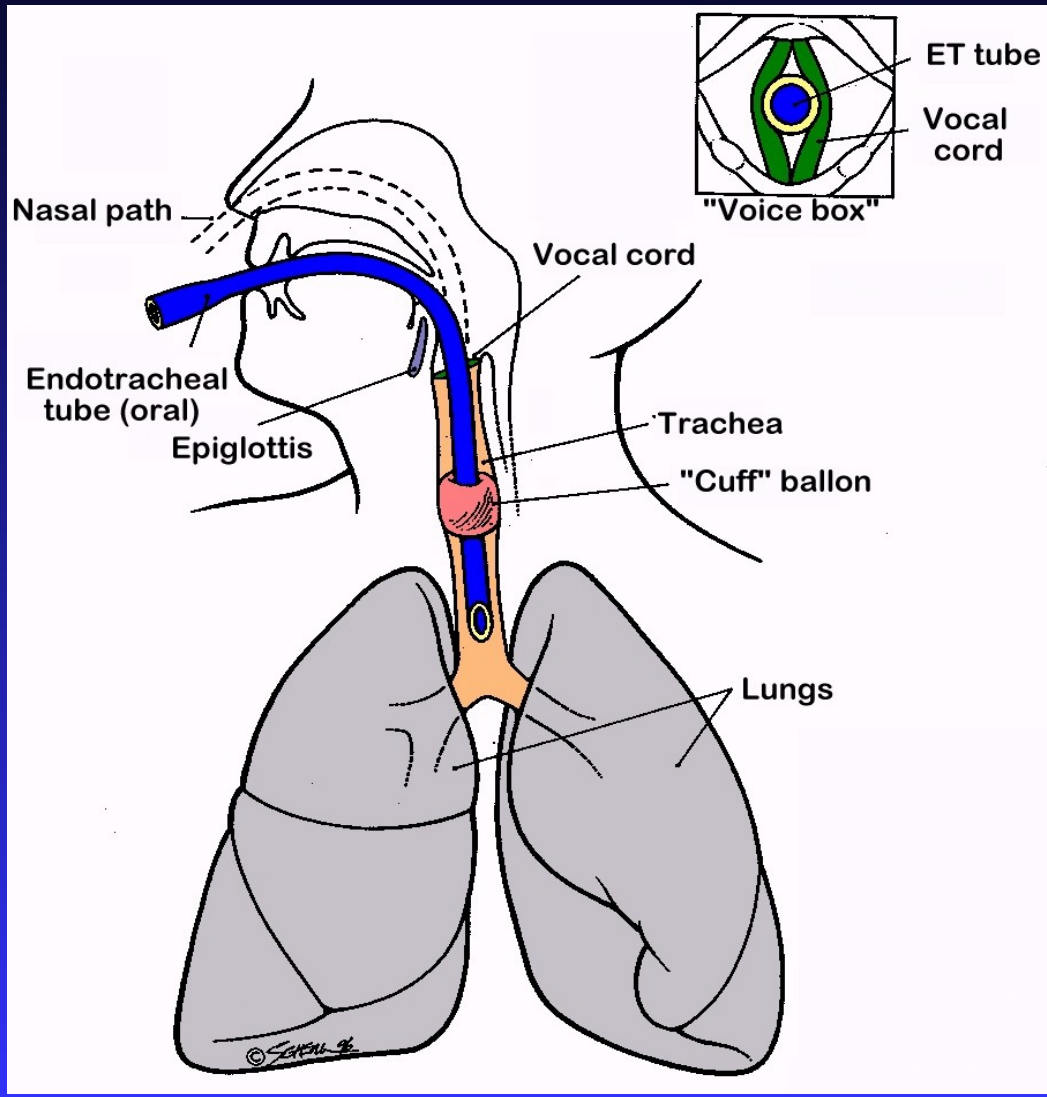
I:

- maintain open airway (GCS < 8)
- toilet (no cough)
- maintain ventilation (shock, hypoventilation)

narrowest place in airway – vocal cords
– subglotic space (<8let)

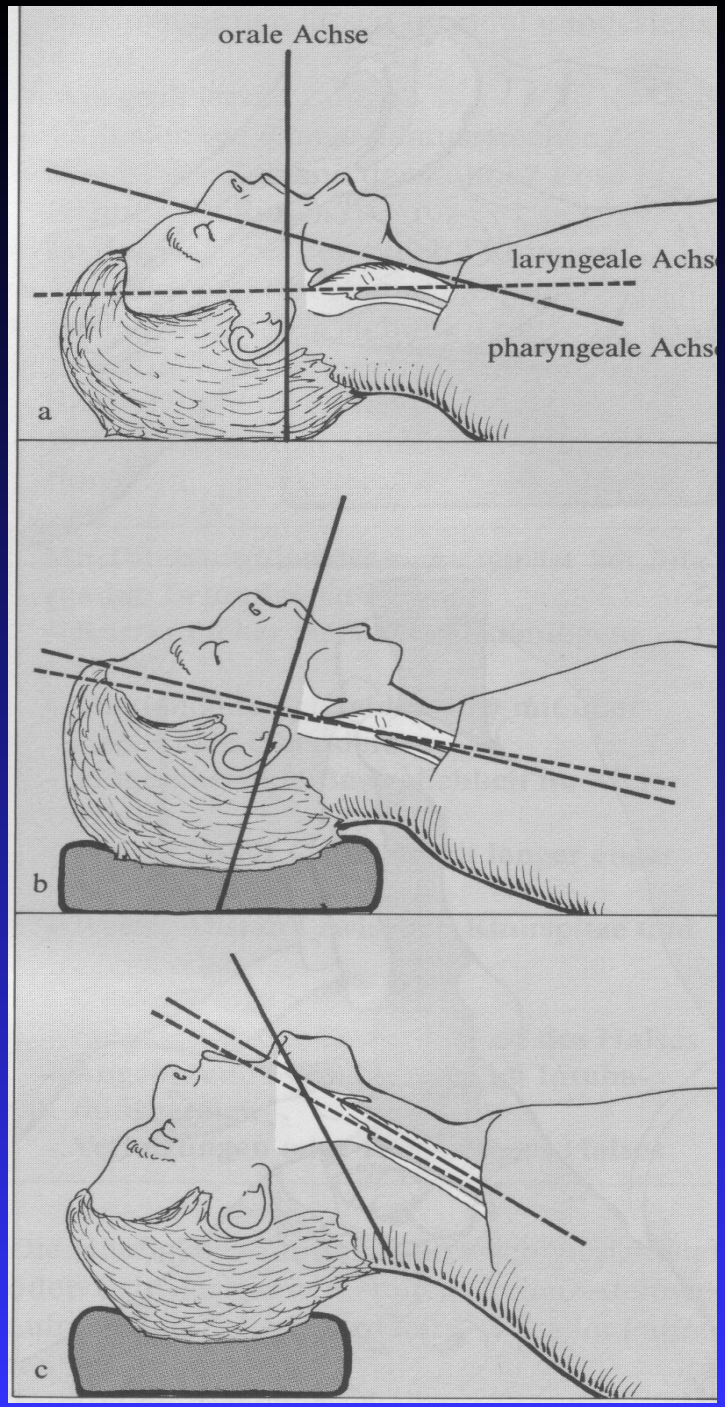
OTI, NTI - aids:

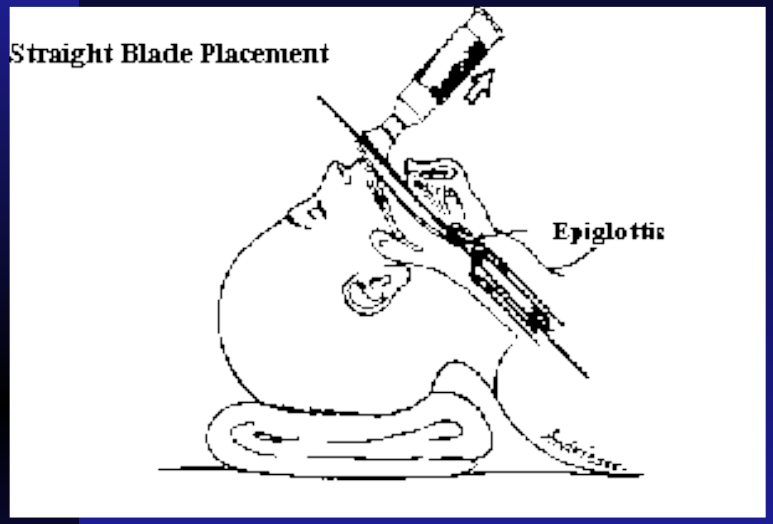
- laryngoscope
- Magill tongs
- tracheal tubes
- syringe
- lead

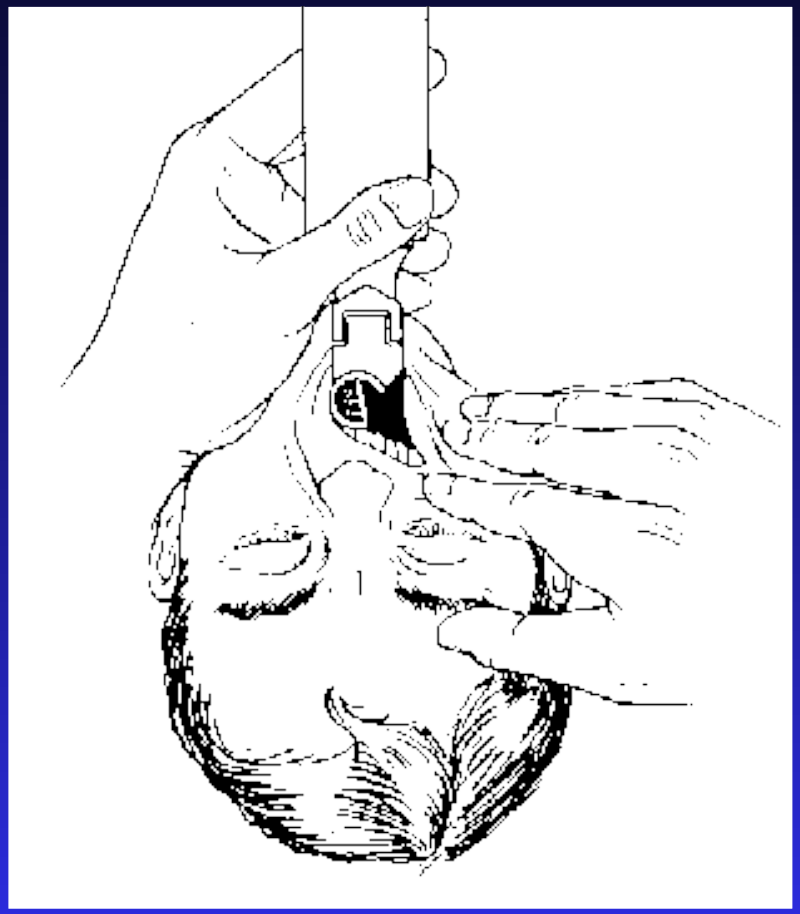


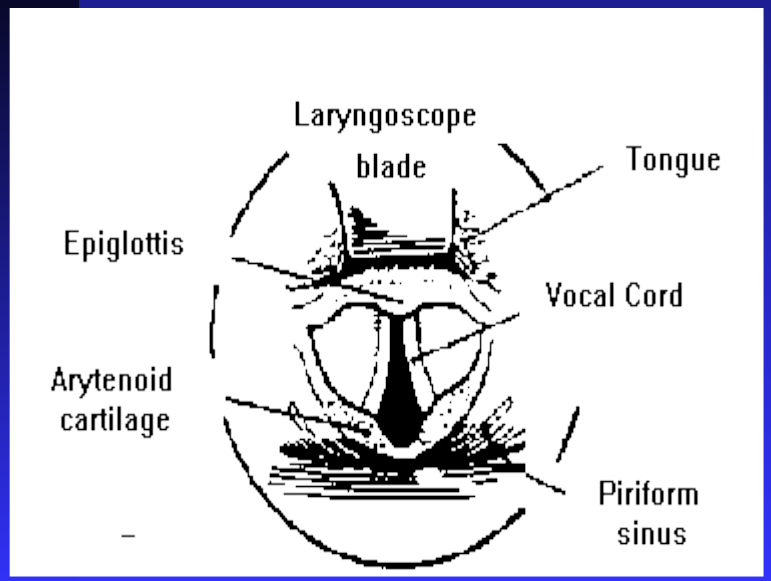
How to:

- prepare all aids, (ventilate)
- position of pat.
- LA, GA, coma
- direct laryngoscopy
- placing tube
- inflate cuff
- ensure position



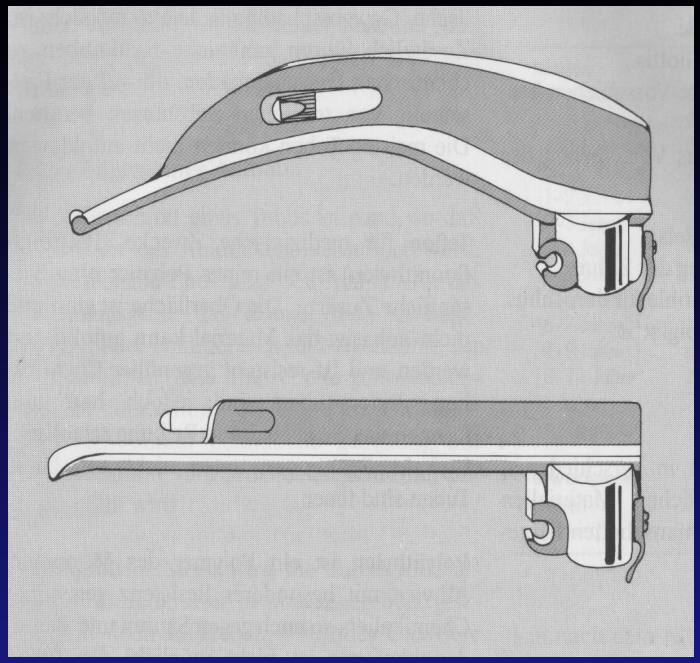

Straight Blade Placement
Epiglottis

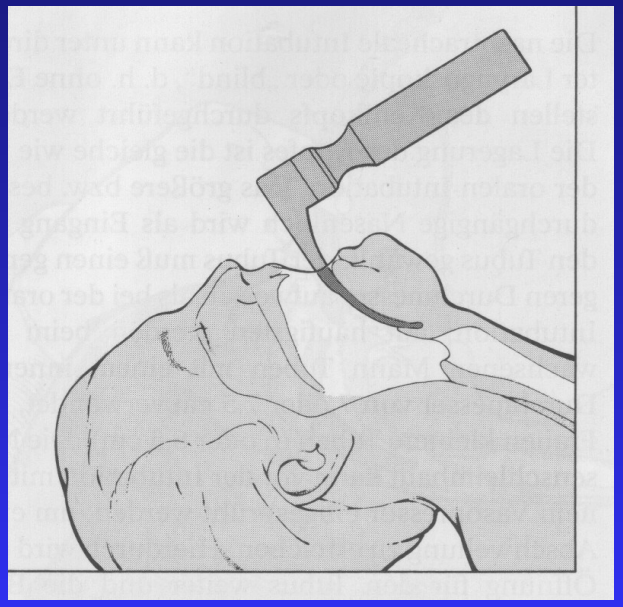


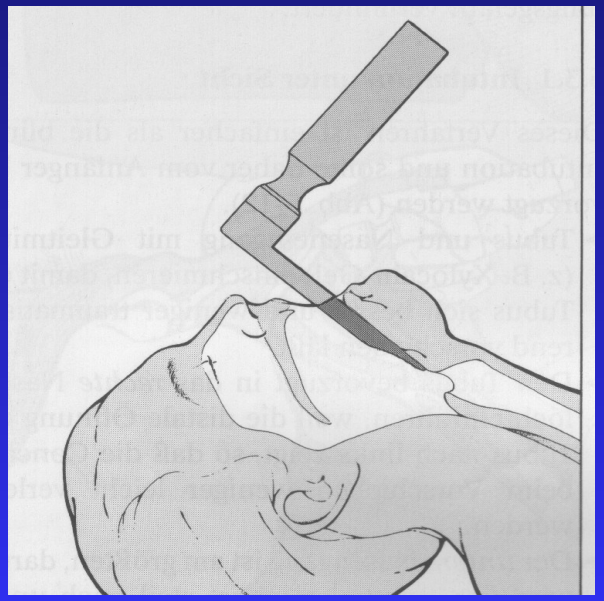

Laryngoscope
blade
Tongue
Epiglottis
Vocal Cord
Arytenoid
cartilage
Piriform
sinus

Laryngoscope:

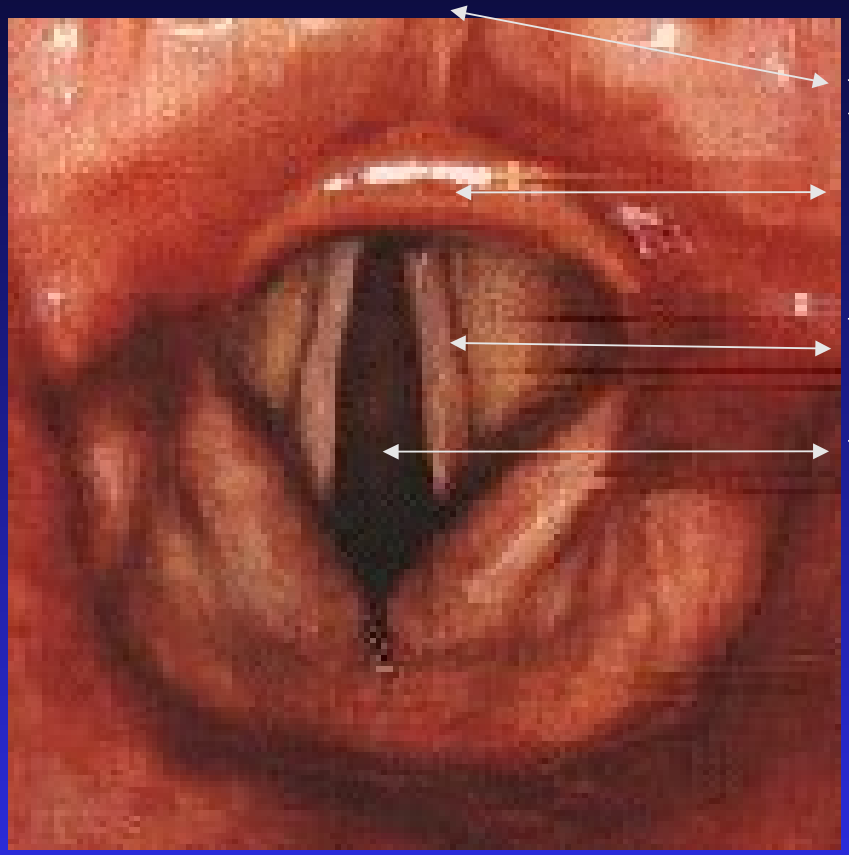
- crooked spoon - Macintosh
- straight spoon - Miller







Laryngoscopic view:



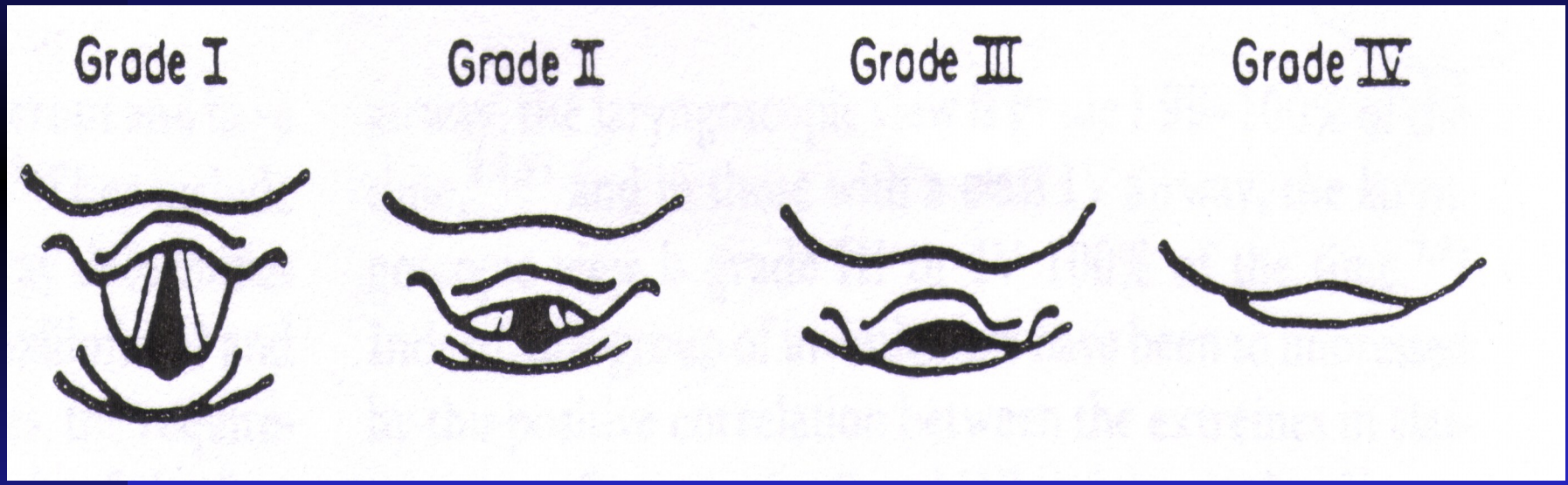
radix of tongue

epiglottis

vocal cords

trachea

Always easy? (Cormac & Lehane)

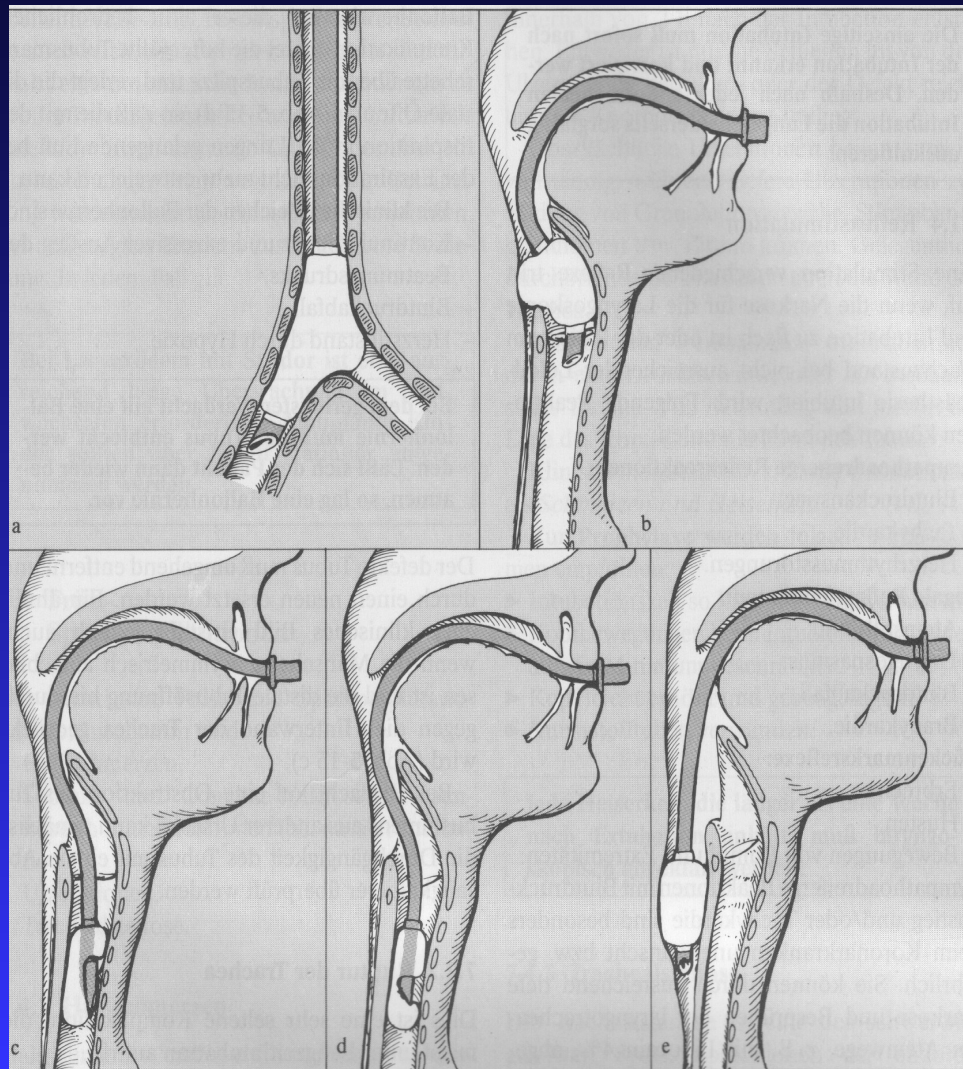


Verify placing of the tube

- auscultation
- End tidal CO2
- fibroscopic view

Complications of TI - early:

- trauma of teeth, soft tissue
- placed to esophagus / endobronchialy
- aspiration
- cardiovascular - ↑BP, ↑f, arrhythmia
- ↑ICP
- laryngospasmus, bronchospasmus



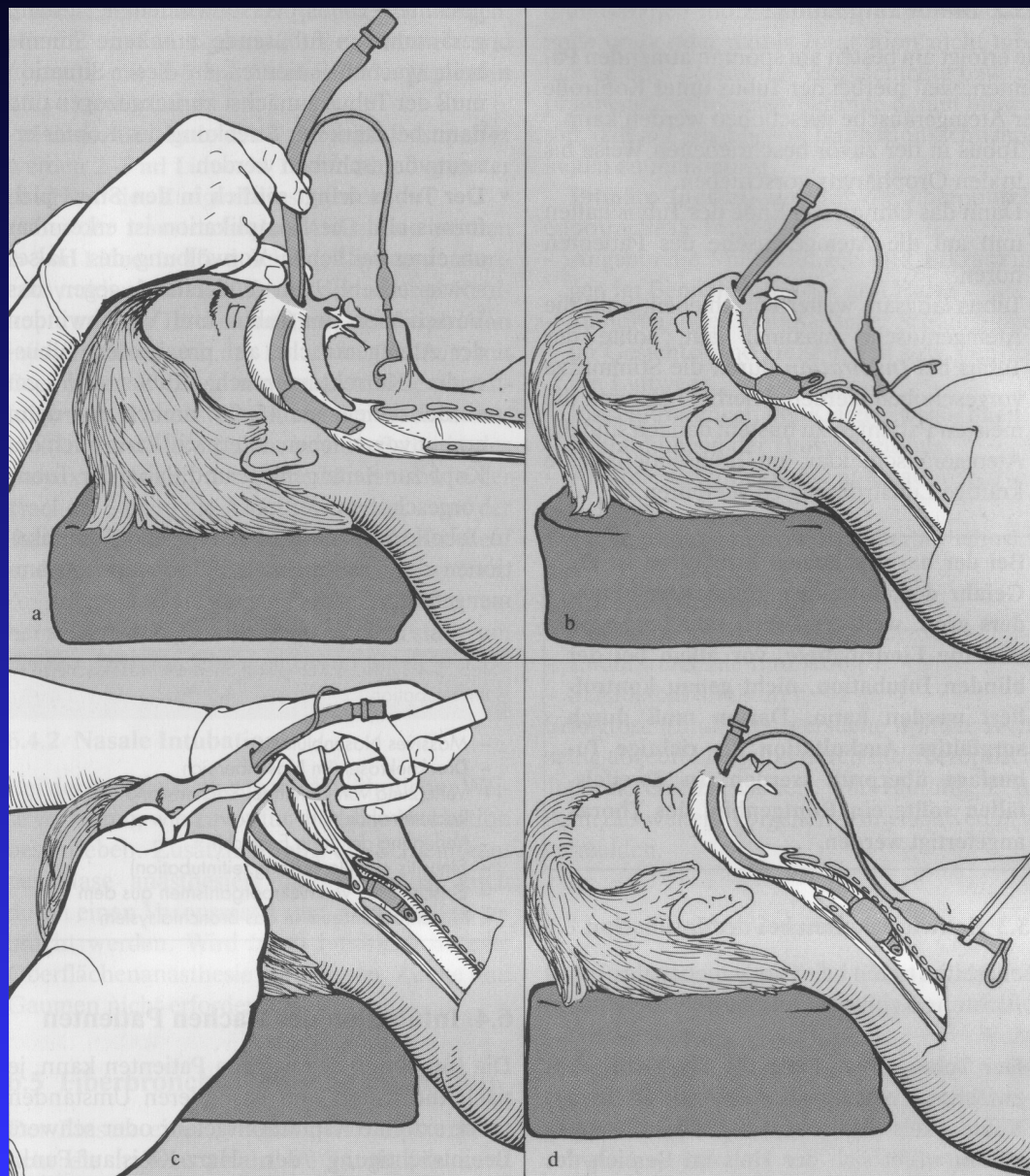
Complication of TI - later:

- damage of vocal cords, trachea
- sinusitis, otitis,
- decubitus – lip, nose
- obturation of tracheal tube by secret, blood

How to do NTI:

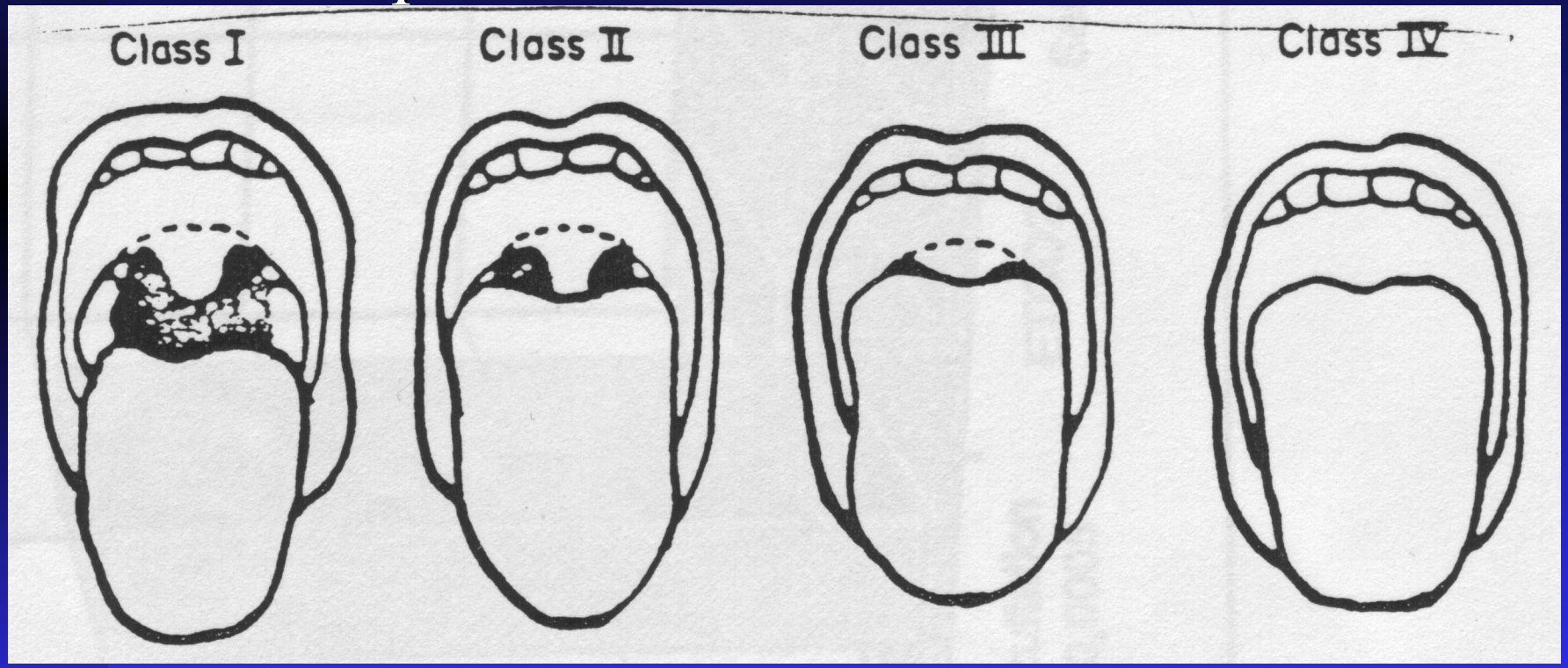
1. LA anemisation of nose
2. tube through nose
3. placing tube under visual control

CAVE:
deviation of septum nasi



Check your neck

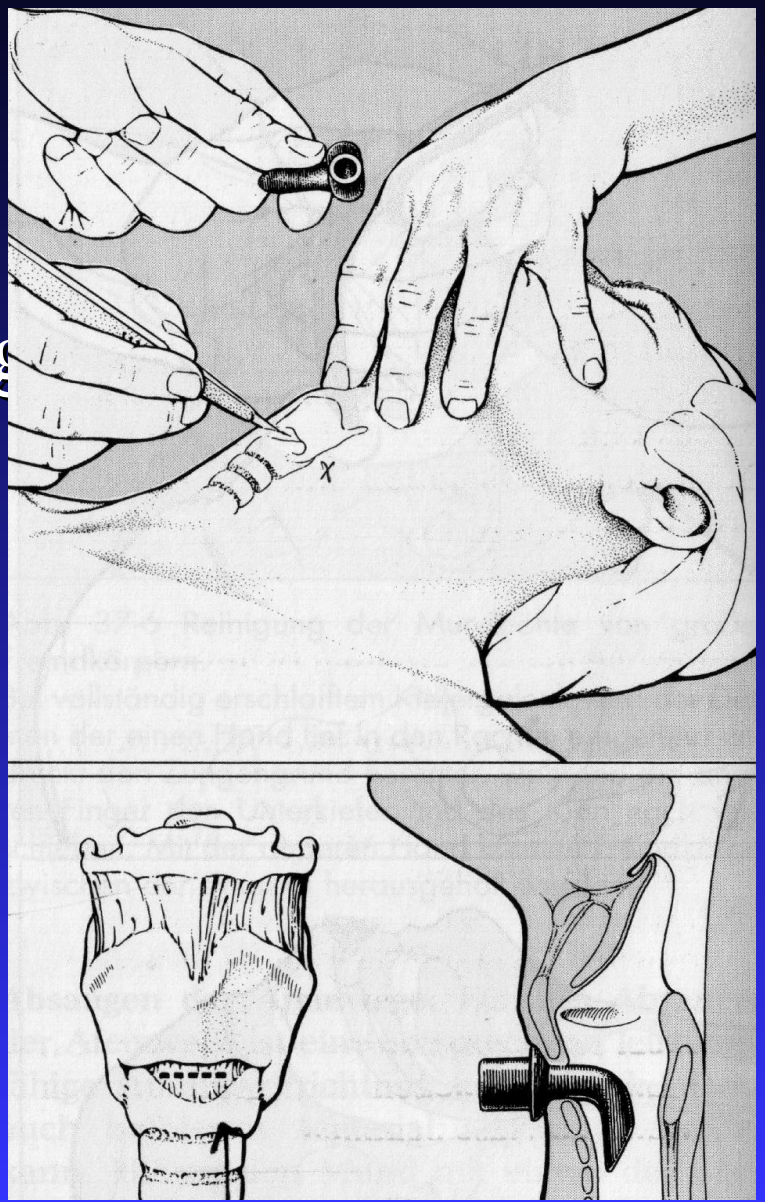
- Mallanpati



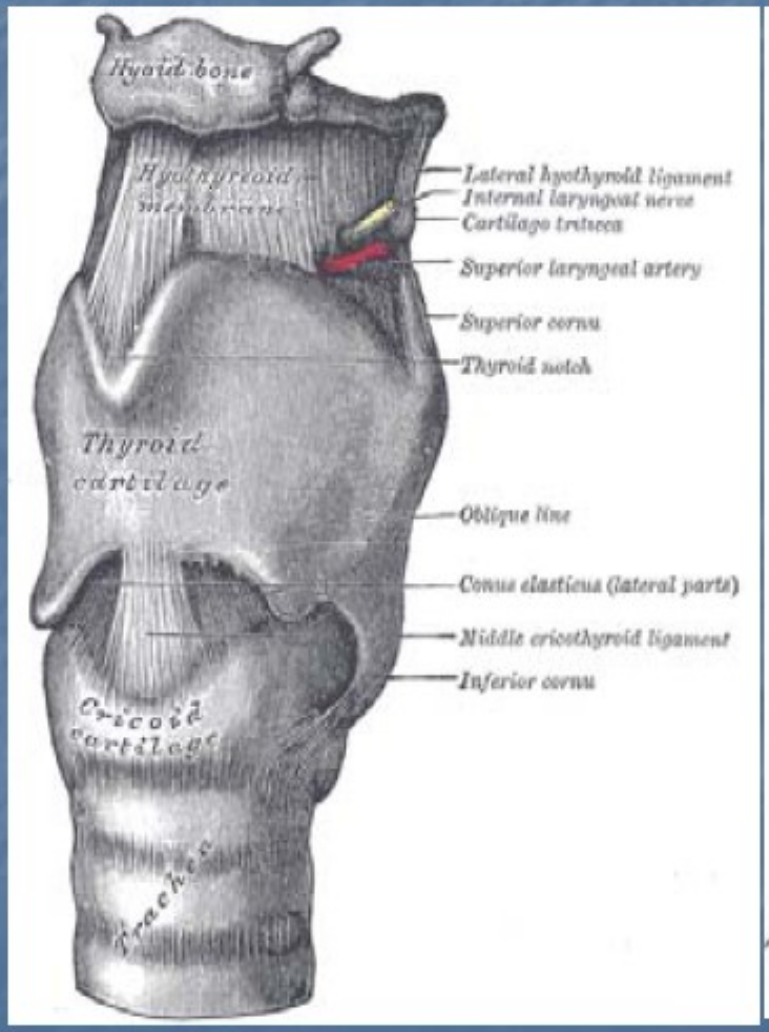
- 3-3-2

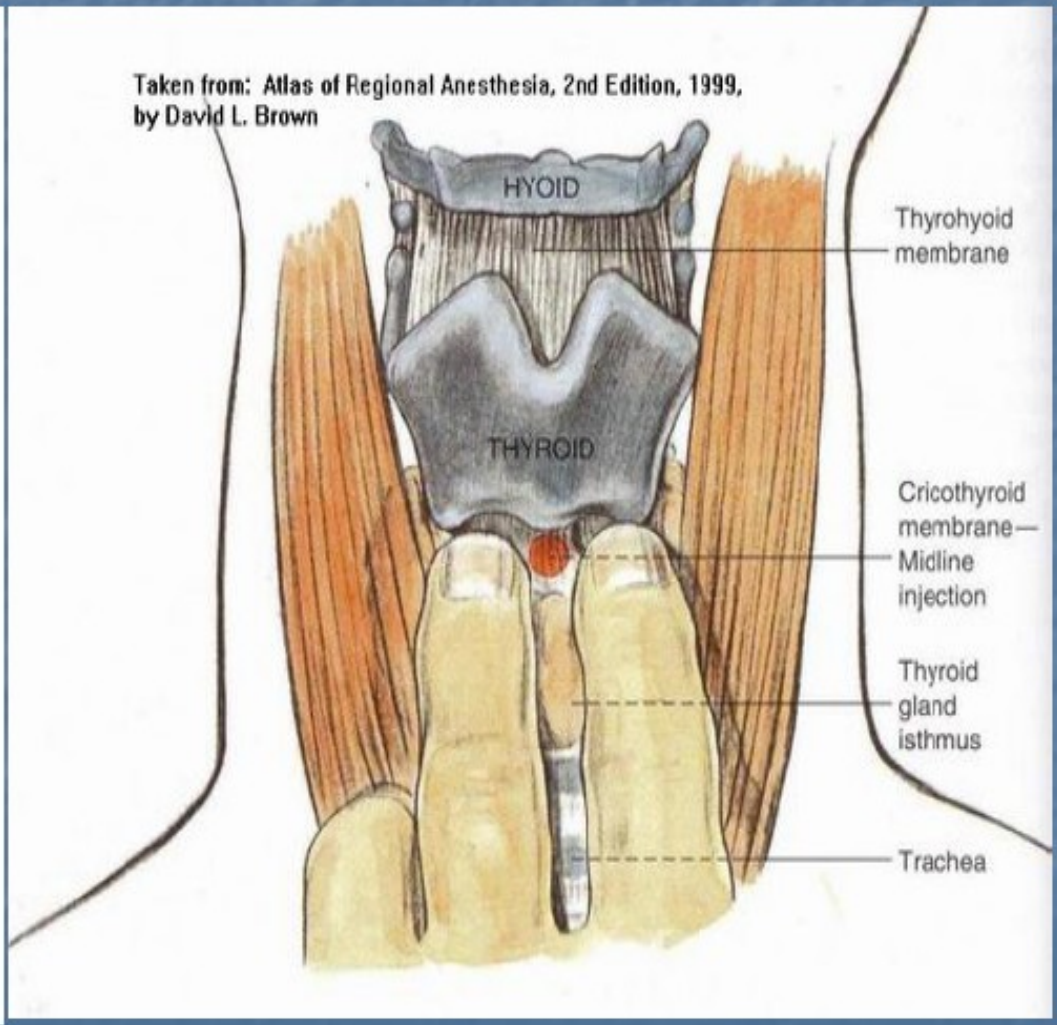
Coniotomy

- urgent access to airway
- lig. cricothyreoideum (lig



Where is the Cric Membrane ?





- Catheter over needle technique was quicker.

- Seldinger technique

Coniotomy

- First try to ventilate, OTI
- find the ligament
- DO it.

Tracheotomy

- surgical access to trachea
- punction TS

- I: maintain AW long time
  - artificial ventilation
  - limitation of dead spac