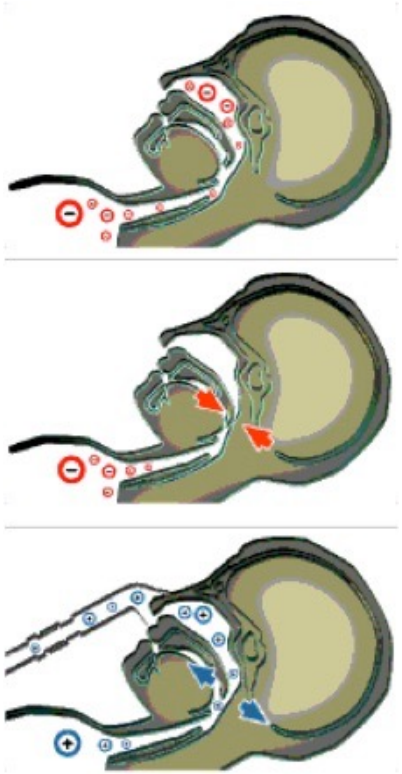
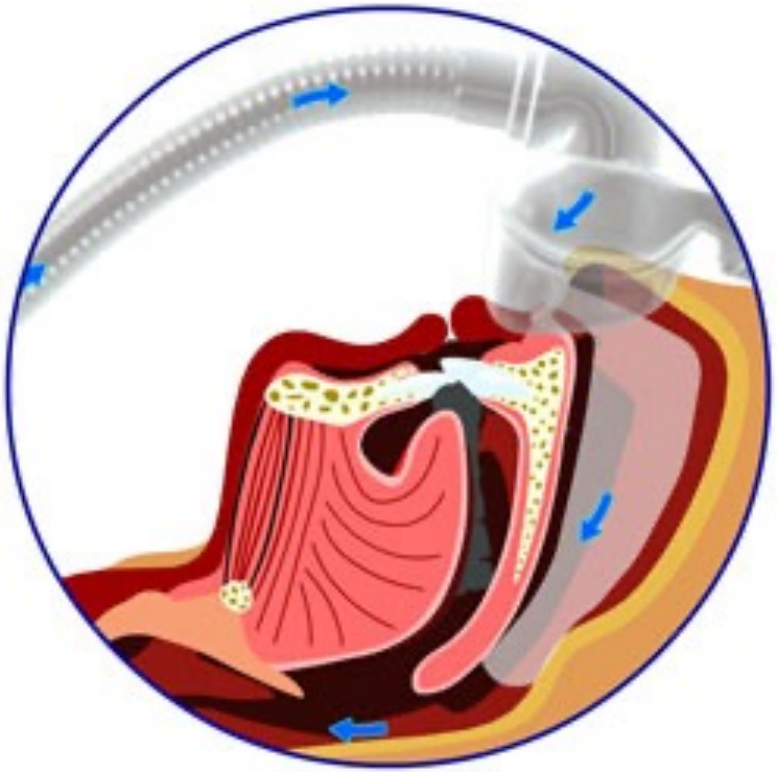
Performing a CPAP Titration

How CPAP Works

- Works by filtering normal room air (21% O2) and applying to a blower
- Measured in cm H2O





Mask Fitting

- Many types and patient preference varies
- Review of types:
  - Nasal
  - Full Face
  - Pillows
  - Hybrid
  - Dental PAP
- Mask should be tight to skin but don’t overtighten!

CPAP Equipment

- Diagnostic units very different from home units
- Diagnostic units have different modes:
  - CPAP
  - Auto CPAP
  - Bi-level PAP
  - ASV
- Home units use interface device and store data on cards or on the Cloud
- Pressure relief
- Humidification

Purpose of CPAP Titrations

- Titration = Gradual process of adjusting strength or dose of a medication or treatment until acceptable or optimal treatment level is achieved
- Patient hookup same as PSG except no thermistor or cannula
- Factors examined during titrations:
  - RDI
  - Mean and minimum SpO2
  - EEG arousal index
  - TST and REM duration at each treatment level

Purpose of CPAP Titrations

- Goals:
  - RDI < 5
  - SpO2 > 90%
  - EEG arousals and RERAs < 5/hour
  - Snoring eliminated
- Goals may be difficult to achieve in single night
- Before titration, educate patient and try to desensitize them

Purpose of CPAP Titrations

- PAP pressure verified by water column manometer
  - Air pushes water to certain level
- Patients may complain they don't sleep well the first night on CPAP
  - Document patient's subjective thoughts on CPAP
- Don't make treatment recommendations to patients
- Home setup for CPAP
  - Set up through DME company
  - AWAKE groups

Increasing CPAP

- Follow lab protocols
- General rule:
  - Increase 2 cm at lower pressures
  - Increase 1 cm at higher pressures
  - Wait 5-20 min between pressure increases
- Increase for:
  - Obstructive apneas
  - Hypopneas
  - Snoring
  - EEG arousals
  - RERAs
  - O2 Desats

Decreasing CPAP

- May need to decrease occasionally
- Typically at the beginning as patient tries to tolerate pressure
- Decrease for central apneas if higher pressure starts triggering them
- Document reason for decrease and when

Bi-Level PAP

- Increases pressure during inhalation and decreases during exhalation
- IPAP = Pressure during inhalation
- EPAP = Pressure during exhalation
- Main purposes for use:
  - CSA
  - Patient intolerance of CPAP
  - Patient requires high level of PAP

Bi-Level PAP

- CSA:
  - Apneas caused by hypocapnia (low CO_2) or hypoxic respiratory drive combined with hyperoxemia (increased O_2 in blood)
- Bi-level PAP machines can become CPAPs by setting IPAP and EPAP at same level
- Settings:
  - Timed: Doesn't detect patient's changes in respirations
    - Reserved for severe patients
  - Spontaneous
  - Timed backup: Patient determines respiration changes until they don't breathe on own

Bi-Level PAP

- Must keep a minimum of a 4 cm gap between IPAP and EPAP per AASM guidelines
- Purposes of IPAP and EPAP:
  - EPAP
    - Holds airway open
    - Increase to correct obstructive apneas
  - IPAP
    - Provides increased volume of air
    - Increase to increase baseline SpO2 and resolve flow limitation (hypopneas, snoring, RERAs, hypoventilation)

Supplemental O2

May be used to increase baseline SpO2

Must have physician's order to add O2

May be used in conjunction with PAP

Usually used if low baseline O2 during wake

Titrate first for obstructions, then add O2 if necessary per lab protocol