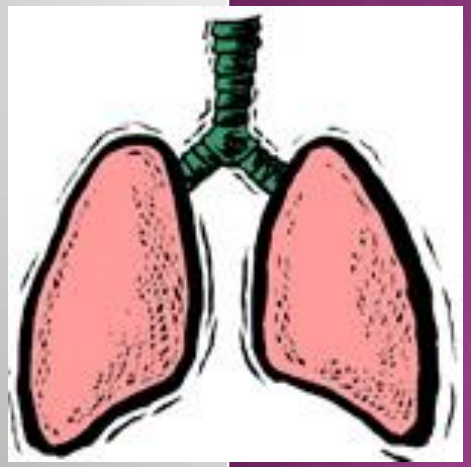
Nasal High Flow



Thanks to:
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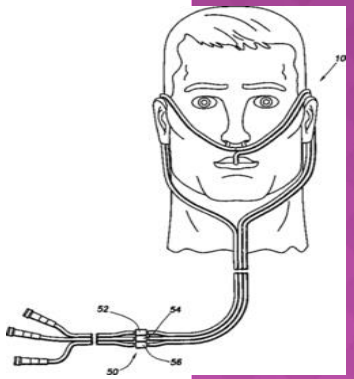
NASAL HIGH FLOW OXYGEN THERAPY

https://itunes.apple.com/gb/app/airvo-2/id734808115?mt=8#

NASAL HIGH FLOW OXYGEN THERAPY

- The aim of therapy is to optimize spontaneous breathing
- High concentrations of blended oxygen and air can be delivered to spontaneously ventilating patients.
- ‘Warm and wet’ oxygen delivered
- Comfortable interface results in good patient tolerance
- Delivers gas up to 60L/min, normal flow in healthy adult is 30L/min



EFFECTS OF NHF THERAPY

- Reduction of anatomical dead space
- Dynamic Positive Airway Pressure
- Supplemental Oxygen delivery
- Comfort
- Optimal Humidity

REDUCTION OF DEAD SPACE

- The anatomical dead space is the volume of air contained in the conducting airways, that is, the volume of gas in airways without alveoli.
- With each inspiration a tidal volume of about 500mls of air enters the lung. Anatomical dead space accounts for approx 150mls, but varies depending on size of patient
- Nasal high flow oxygen is capable of clearing anatomical dead space in the upper airways reducing CO2 re-breathing and increasing oxygen delivery
- Improved patient synchrony
- Increased alveolar ventilation

DYNAMIC POSITIVE AIRWAY PRESSURE

- A positive nasopharyngeal pressure is created as the high flow overcomes the resistance against expiratory flow, while a relatively low pressure it is considered adequate to provide a certain level of pulmonary distending pressure and maintain alveolar recruitment improving gas exchange.
- Airway pressure dynamically changes depending on breath and flow
- Promotes slow and deep breathing
- Increases alveolar ventilation

SUPPLEMENTAL OXYGEN

- Increased confidence in the delivery of a constant Fio2- The difference between the inspiratory flow and delivery is small therefore delivery remains constant.
- Higher concentrations of oxygen delivered

COMFORT

- Different interfaces used: nasal cannula, face mask, tracheostomy mask
- Better tolerance compared to NIV
- Better tolerance results in more effective therapy delivery and possible reduced length of ICU stay

OPTIMAL HUMIDITY

- Prevents drying out of the airway epithelium
- Improves mucus clearance
- The primary mechanical pulmonary defence mechanisms are sneezing, coughing, gagging and nasal hairs. The critical defence mechanism is the mucocillary transport system which traps and neutralises inhaled contaminants (in mucus) and transports them up and out of the airway keeping the lungs free from infection causing pathogens. This system is very sensitive to loss of humidity.
- Improved mucocillary function facilitates clearance of secretions and is associated with less atelectasis resulting in an improved VQ ratio and improved oxygenation and more effective Fio2 delivery

USES FOR NHF IN ICU

- Hypoxemic respiratory failure
- Exacerbation of COPD
- Post Extubation
- Pre Intubation
- Sleep apnoea
- Acute heart failure
- Patients not suitable for intubation
- Palliative care

ANY QUESTIONS?