



# CPAP in Neonates

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# Physiological Considerations for Neonates

- Preferential nose breathers
- Flow and pressure in the airway can stimulate breathing
- Predisposed to alveolar collapse at end exhalation
- Chest wall compliance is generally greater than lung compliance
- Tend to use abdominal breathing



# CPAP

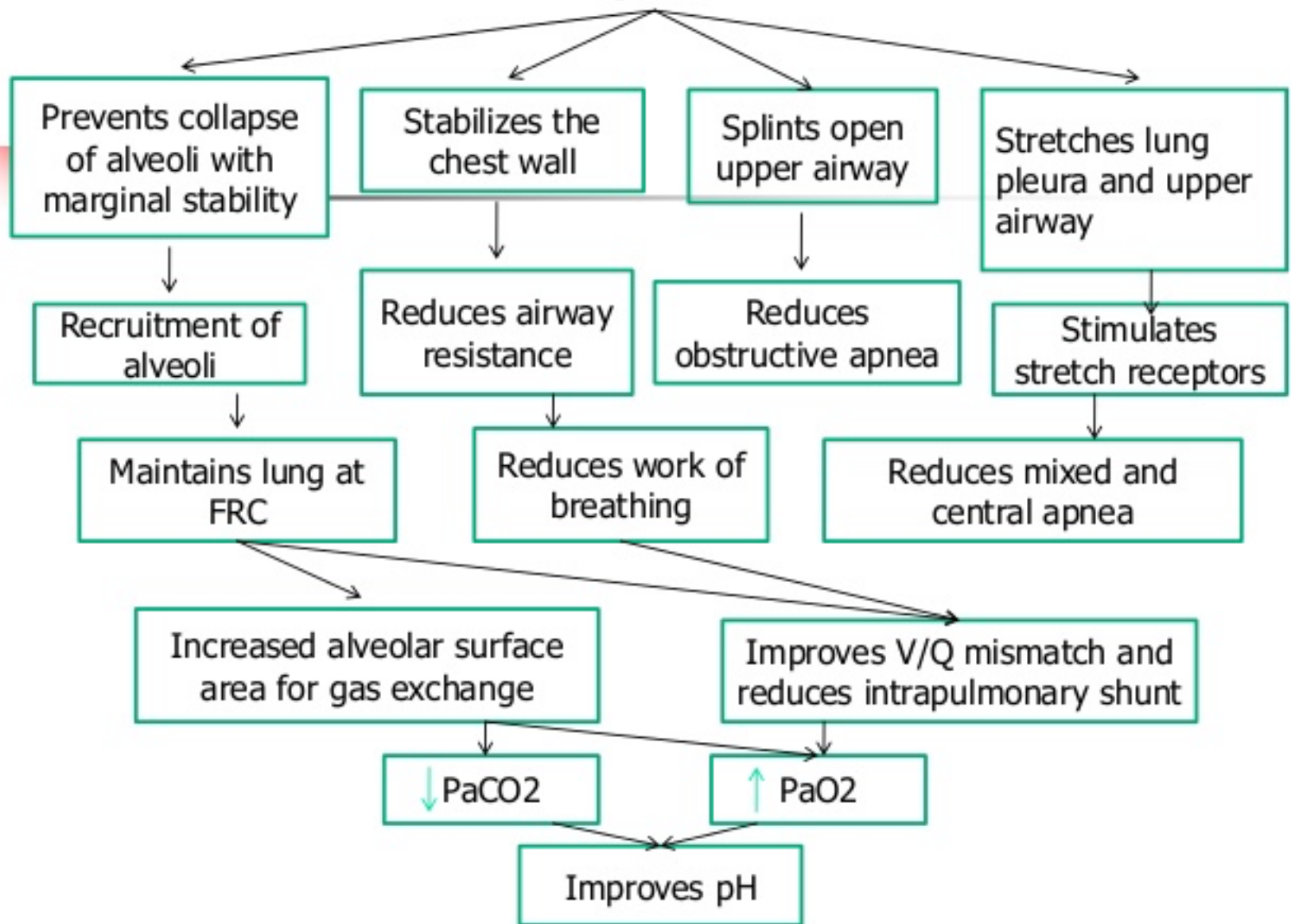
o Continuous Positive Airway Pressure



How does CPAP help?



## ■ CPAP





When is CPAP used?



# Uses for CPAP

- Bridge between oxygen therapy and ventilation
- Respiratory distress
  - RDS
  - TTN
  - Pneumonia
  - Apnoea etc

# Types of CPAP

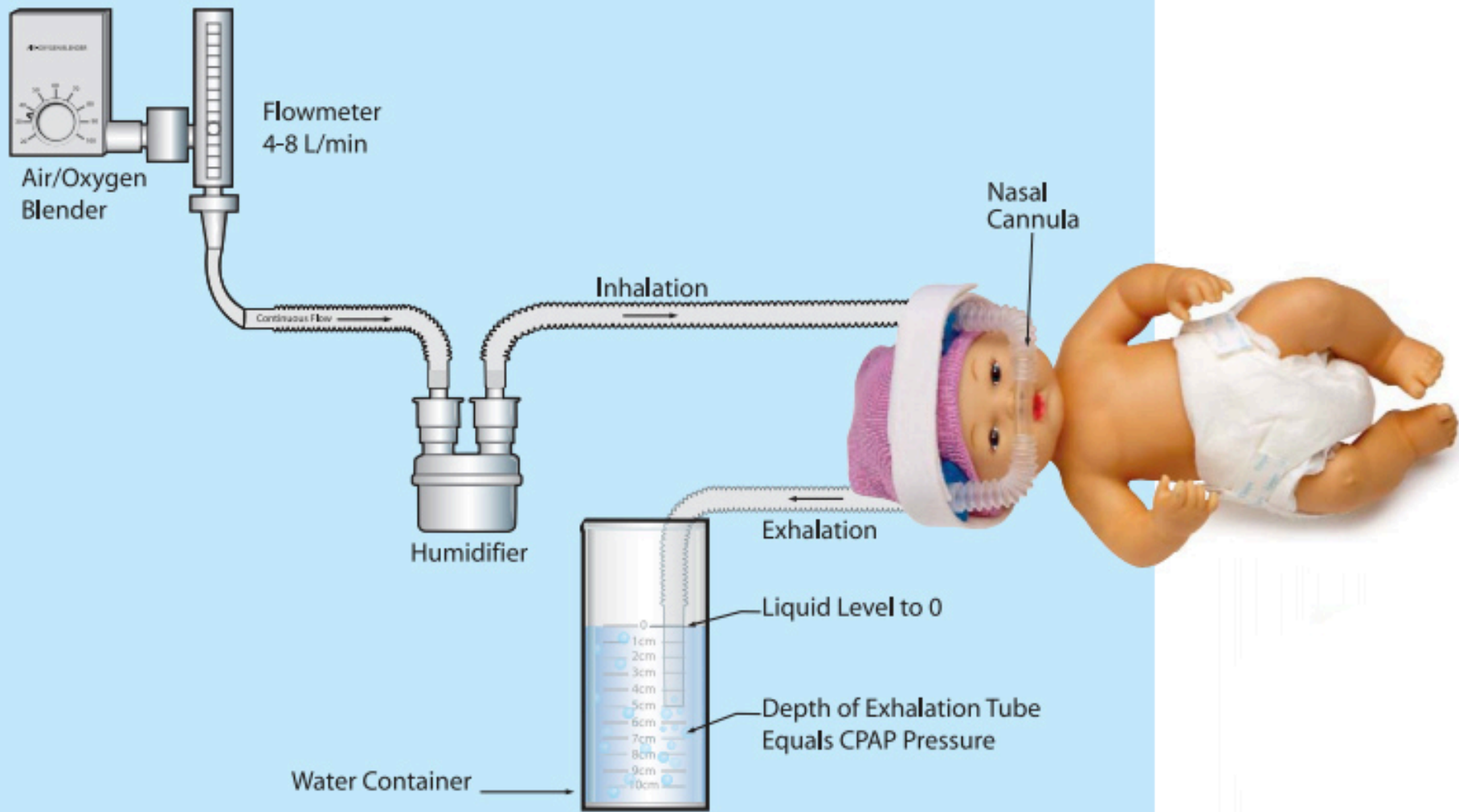
- Bubble CPAP
- Mechanical ventilator CPAP
- Neopuff (resuscitaire)
- HFNP



# Bubble CPAP

- A fluid-filled reservoir is used as a means of maintaining the desired level of CPAP
- Provides a natural “pop-off”
- Oscillations in the circuit have been speculated to aid in ventilation
- Simple, inexpensive, and dependable

# Simple Bubble CPAP Setup and Components





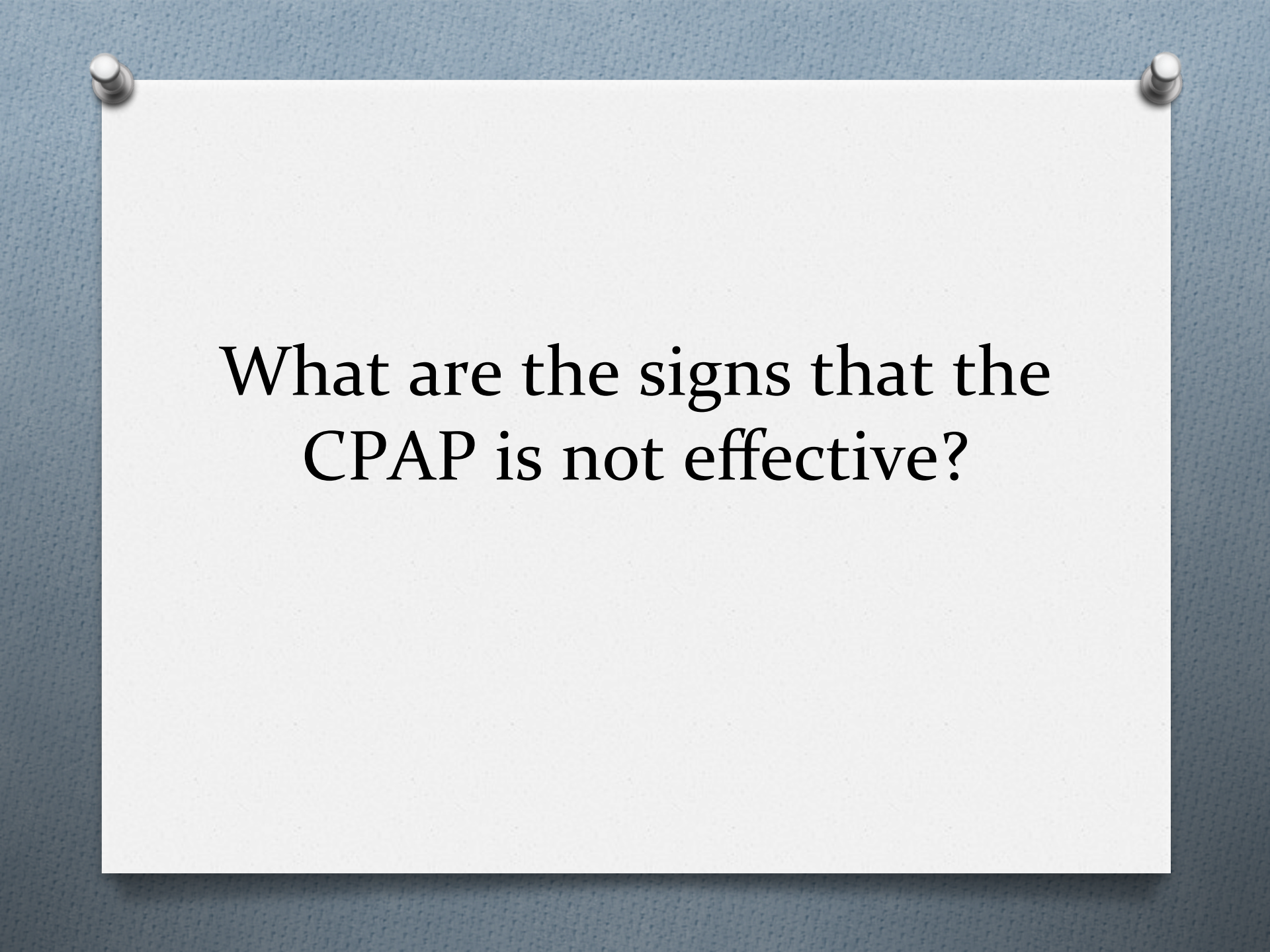
# Why won't it bubble?

- o Complete or partial circuit disconnect
- o Complete or partial prong disconnect
- o The prongs are out of the nares
- o Inadequate flow through the circuit
- o Prongs are too small for the patient
- o Patient's mouth is open

# Issues with Cpap

- o Equipment
- o Monitoring
  - o Vitals; capillary gas
- o Deflate stomach
  - o Ng/og
- o NBM to start
- o Consider CXR
  - o Risk of pneumothorax – or is this the cause o the respiratory distress?





What are the signs that the  
CPAP is not effective?

# Ineffective CPAP – call senior

- o Ongoing chest retraction / grunt ++
- o Apnea on CPAP
- o  $FiO_2 > 0.5$  with nasal CPAP  $> 8\text{cm}$
- o  $PaCO_2 > 55$
- o Baby not tolerating CPAP