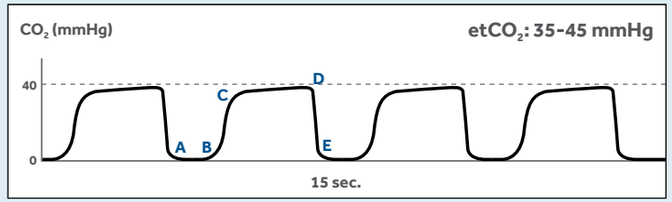
NORMAL AND ABNORMAL $etCO_2$/CAPNOGRAPH WAVEFORMS

Normal Capnogram

The normal capnogram is a waveform which represents the varying CO_2 level throughout the breath cycle.

Waveform Characteristics:

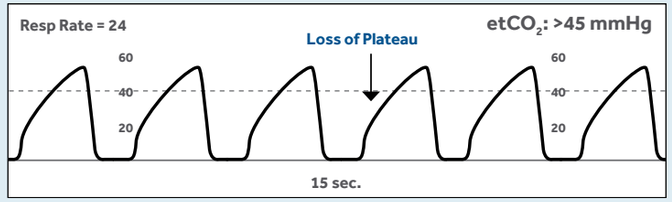
A-B: Baseline
B-C: Expiratory Upstroke
C-D: Expiratory Plateau
D: End-Tidal Concentration
D-E: Inspiration



Bronchospasm/Asthma

Other Possible Causes:

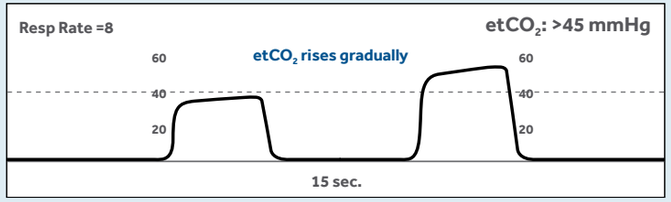
- Bronchospasm/COPD
- Obstruction in the expiratory limb of the breathing circuit
- Presence of a foreign body in the upper airway
- Partially kinked or occluded artificial airway



*Increasing $etCO_2$ (Hypoventilation)

Other Possible Causes:

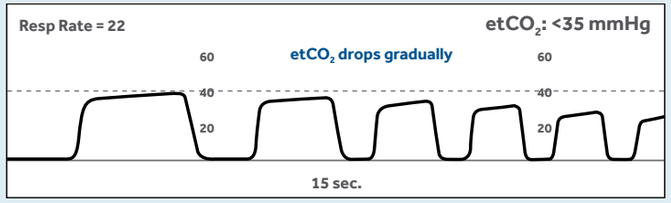
- Decrease in respiratory rate
- Decrease in tidal volume
- Increase in metabolic rate
- Rapid rise in body temperature (malignant hyperthermia)



*Decreasing $etCO_2$ (Hyperventilation)

Other Possible Causes:

- Increase in respiratory rate
- Increase in tidal volume
- Metabolic acidosis
- Fall in body temperature

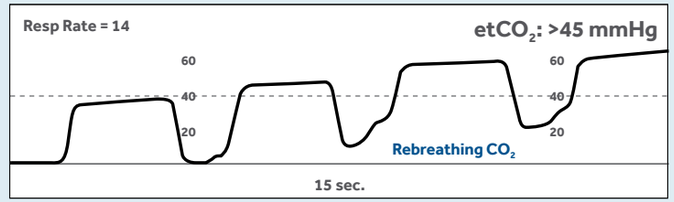


*Assumes adequate circulation and alveolar gas exchange

Rebreathing CO_2

Other Possible Causes:

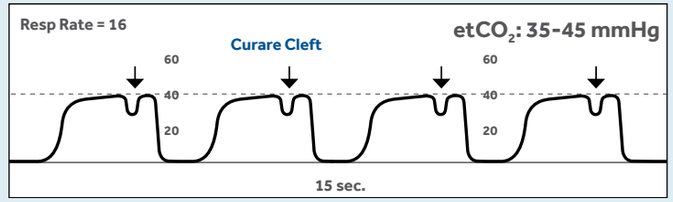
- Faulty expiratory valve
- Inadequate inspiratory flow
- Partial rebreathing
- Insufficient expiratory time



Curare Cleft

Other Possible Causes:

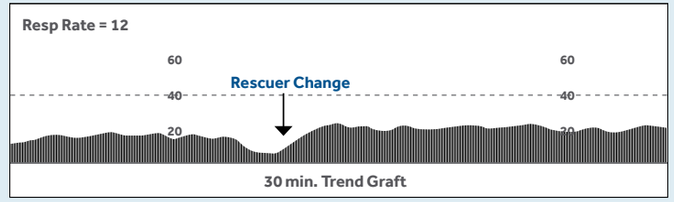
- Patient is mechanically ventilated
- Depth of cleft is proportional to degree of muscle relaxants



Cardiac Arrest

Other Possible Causes:

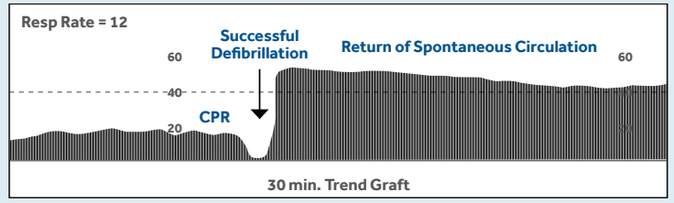
- Decreased or absent cardiac output
- Decreased or absent pulmonary blood flow
- Sudden decrease in CO_2 values



Return of Spontaneous Circulation

Other Possible Causes:

- Increase in cardiac output
- Increase in pulmonary blood flow
- Gradual increase in CO_2 production



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