

The EtCO₂ Waveform Field Card

12 capnogram patterns, and what it usually means

Normal EtCO₂: 35–45 mmHg · PaCO₂–EtCO₂ gradient: 2–5 mmHg

Phases: I baseline · II expiratory upstroke · III alveolar plateau · IV inspiratory downstroke



Normal rectangular waveform, flat plateau

Adequate ventilation and perfusion



Sudden loss to zero

Disconnection, oesophageal placement, complete obstruction, ventilator failure



Sudden drop to a low, non-zero value

Leak, partial disconnection, partial obstruction, cuff leak



Exponential fall over a few breaths

Fall in pulmonary blood flow: arrest, air embolism, severe hypotension



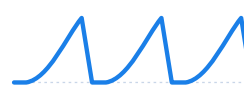
Gradual rise

Hypoventilation, rising CO₂ production (fever, sepsis, early MH), CO₂ absorption in laparoscopy



Gradual fall

Hyperventilation, falling temperature, falling perfusion, hypovolaemia



Shark-fin

Expiratory obstruction: bronchospasm, COPD, kinked tube, secretions



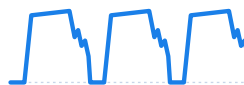
Curare cleft

Spontaneous respiratory effort against the ventilator



Elevated baseline

Rebreathing: exhausted absorbent, incompetent valve, inadequate fresh gas flow



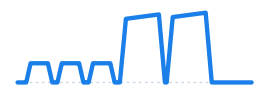
Small ripples on the plateau

Cardiac impulse transmitted to the airway - small tidal volumes, paediatric



A few small diminishing waveforms, then flat

Oesophageal intubation until proven otherwise



Sudden rise during CPR

Return of spontaneous circulation

RespiCO₂® by Brainiac Healthcare

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Disclaimer: Educational reference. Clinical judgement and full patient assessment always take precedence.

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