Reference Notes for Capnography

Normal Values

Normal End-tidal CO2 values: 35-40mmHg (4.5%- 5.5%)
Normal Inspired CO2 value 0.0% (0mmHg)

Suggested Alarm Limit Settings:

High End-Tidal CO2 alarm setting	6.5%	(50mmHg)
Low End-Tidal CO2 alarm setting	2.0%	(15mmHg)
Inspired CO2 alarm setting	1.0%	(8mmHg)

Corrective Action:

High end-Tidal CO2 levels:

Check condition and presence of Soda Lime. Replace if necessary
Check for sufficient fresh gas flow from anaesthetic machine
Give a few extra manual breaths to increase the Minute Volume of the patient and reduce the end-tidal CO2 value

Low End-Tidal CO2 levels:

Most commonly occur during mechanical ventilation due to hyper ventilation. In these cases reduce the ventilation Minute Volume – either a slower respiratory rate and/or a reduced tidal volume
Can occur due to tachypnoea following induction or light anaesthesia.
Unless prolonged, no cause for alarm. Check patient depth of anaesthesia.

High Inspired CO2 value

Exhausted or absent soda lime. Check and replace if necessary.
Insufficient fresh gas flow, leading to re-breathing. Increase FGF
Blocked/sticky expiratory valves (especially on ADE systems) leading to rebreathing.

Low Flow Anaesthesia

During Low Flow Anaesthesia with a closed system the oxygen delivery must at least meet the metabolic requirement for the animal.

Oxygen requirement:
Basic metabolism = 10mls/kg/minute.
(Varies with body temperature and metabolic rate)

e.g. 30kg Labrador needs a minimum of 300mls/minute oxygen flow.

In practice you would set this slightly higher than this at say 4-500mls/min. During low flow anaesthesia monitor a) breathing circuit oxygen (and patient SpO2) levels for potentially hypoxic mixtures and b) circuit CO2 levels indicating absorbent exhaustion.

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