

ANAESTHESIA DEPRESSES VITAL FUNCTIONS

Monitoring equipment is now affordable for veterinary medicine and is highly beneficial as good monitoring draws immediate attention to issues at an early stage

Frequent and regular measurements are vital

A STAFF MEMBER DEDICATED TO MONITORING IS MORE IMPORTANT THAN EQUIPMENT
e.g. SIMPLE pulse palpation + pulse oximetry may decrease anaesthetic-induced mortality

WHAT SHOULD I MONITOR?

Airway/Breathing/Circulation Also: Anaesthetic depth, temperature, fluid therapy requirements

AIRWAY

Airway must be patent

- Check respiration is smooth & easy
- Chest movement and movement of rebreathing bag should match
- Use capnograph and pulse oximeter (Fig 1 and 2)

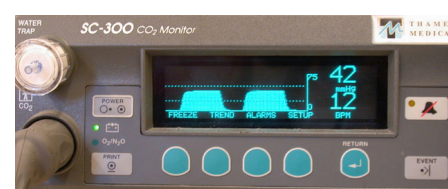


Fig 1. Normal capnograph (Cat)

BREATHING

Require enough for gas exchange – O₂ & CO₂

- **Breathing rate:** High - Too light? Pain? Hypoxic? Hypercapnic?
Low - Too deep/respiratory depression? Poor brain perfusion?
- **Breathing pattern:** Jerky & laboured - airway (partially) blocked? Patient too deep?

If respiration is inadequate – VENTILATE (best to intubate if not already in place)



Fig 2. Pulse oximeter (cat's tongue)

CIRCULATION

Require adequate perfusion to supply tissues with oxygen

Heart rate: High - Too light? Pain? Hypoxic? Hypercapnic? Hypovolaemic? Hypotensive?
Low - Too deep? Drug effect? Vagal stimulation?

Pulse: Difficult to feel - Too deep? Hypovolaemic?
Irregular - Drug effect? Too deep? Is circulation affected? Dysrhythmia?

Use pulse oximeter, capnograph, ECG, monitor BP (Fig 3)

If circulation is inadequate – reduce anaesthetic, supply fluids

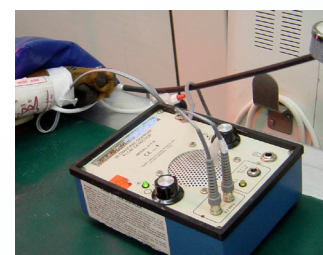


Fig 3. Arterial blood pressure measured indirectly with Doppler

WHAT ELSE?

• **DEPTH OF ANAESTHESIA:**
(Fig 4)

• **TEMPERATURE**

• **FLUID BALANCE**
(Fig 5)

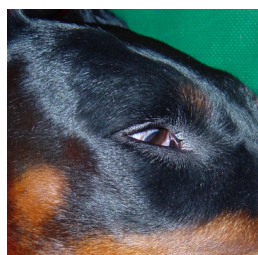


Fig 4. Rotated eye (dog) depth suitable for surgery



Fig 5. Simple fluid flow controller



Fig 6. Pulse oximeter screen: dog breathing room air

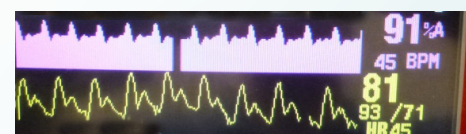


Fig 7. Arterial blood pressure with SpO₂

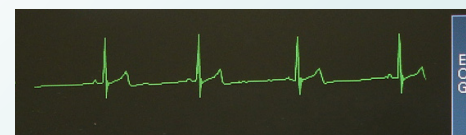


Fig 8. Normal ECG

WHAT DOES THE EQUIPMENT TELL YOU?

Pulse oximeter (PO): How much O₂ is in the blood (SpO₂), peripheral pulse strength (Fig 6)

Capnograph: Expired & inspired CO₂ = adequacy of respiration & circulation

Blood pressure: Adequacy of circulation (combined with pulse ox. and capnography) (Fig 7)

ECG: Reflects electrical activity of the heart ONLY, rhythm information but NO circulation info (Fig 8)



Paulo Steagall
MV MSc PhD DACVAA

Prof Vet Anaesthesia and Pain Management, Université de Montréal, City University of Hong Kong



Polly Taylor
MA VetMB PhD DVA DipECVAA
MRCA FRCVS

RCVS and European Specialist in Veterinary Anaesthesia and Analgesia



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