

AAS ADVANCED ANESTHESIA SPECIALISTS

Guide To Anesthesia

“Which monitor should I get”?

Ventilation, Oxygenation or Blood Pressure?

Comparison of Parameter's Monitored in Anesthesia



Feature	Nellcor Pulse Ox	Parks Doppler BP	Cardell NIBP	Apalert	Respironics ET CO ₂
Simple, quick & portable	Yes	No	Yes	Yes	Yes
Automated & digital display	Yes	No	Yes	No	Yes
Ease / \$\$ to maintain	Yes	Probe \$\$	Yes	Yes	Yes
Continuous Pulse monitor	YES	YES	Yes if SpO ₂	No	Yes if SpO ₂
Cardiovascular function	Some	Yes	Yes	No	cardiac arrest
Oxygenation	YES	No	Yes if SpO ₂	No	Yes if SpO ₂
Apnoea detection	No	No	No	Yes	Yes
Failed intubation	No	No	No	Some	Yes
Ventilation status	No	No	No	No	Yes
Anesthesia depth eval.	?	Yes	Yes	No	Yes
Conscious cat BP	No	Yes	YES	No	No
Busy anesthesia practice	YES	No	YES	Yes	YES

Capnography: mainstream or sidestream?

Side-stream sampling systems are mechanically complex, continuously drawing gas from the airway (ET tube adapter) to an infrared spectrometer located in a distant monitor. This technology requires considerable lengths of tubing, a vacuum pump, dehumidification and real time measurement of pressure drops in the system. Errors occur because of small sample volumes (eg Cats), mixing of the gas sample in the tubing, difficulties of moisture removal and of pressure measurement. Monitors are expensive to maintain and cause waste gas pollution because of continuous sampling from the Anesthetic circuit.



Sidestream sampling

Mainstream sampling systems are electronically complex with the optical sensor being located at the ET tube adapter. This has been made possible by improved optics and miniaturisation. The main disadvantages were cost and fragility of the sensors and size of the ET adapters increasing dead space in small patients. The Respironics mainstream system overcomes these traditional problems, eliminates waste anesthetic gas pollution and has become the standard for veterinary respiratory monitoring in the USA.



Mainstream sampling

Respironics mainstream ET CO₂

- Simple to set up and use
- No moisture problems
- Reusable sensor - min. maintenance
- Disposable airway adapters
- No anesthetic gas pollution
- No “end-user” calibration required
- Micro-vol. pediatric airway adapter
- Adult airway adapter

Blood pressure: Doppler or Cardell NIBP?



Until a few years ago our recommendation was to use Doppler's in cats and small dogs in anaesthesia and critical care. Over the last few years we have been using a lot more arterial catheters for direct BP monitoring in cats and small dogs. Our experience with the Cardell® NIBP (Sharn NIBP cuff on hind limb above hock) is the mean BP is very reliable and systolic BP more accurate than Doppler SAP. We tend to ignore the diastolic estimate of BP which is the least reliable. Diastolic BP can be easily calculated: $DAP = (3 \times MAP - SAP) / 2$.