think ANAESTHESIA

Going with the flow:

Understanding Anaesthesia Breathing Systems

Free Webinar Summary

Speaker

Courtney Scales

DipVN, NCert(Anaesth), RVN

FOUNDER OF VETERINARY A*NURSE*THESIA

WATCH NOW ON-DEMAND:

https://bit.ly/2W11Cgf

Going with the flow: Understanding Anaesthesia Breathing Systems

WATCH NOW ON-DEMAND:

https://bit.ly/2W11Cgf

Fresh Gas Flow (FGF)

- Calculations overestimate for safety
- Ensures the patient is receiving fresh gas (no breathing of expired gases)
- The use of capnography provides information that allows the FGF to be decreased to the minimum required rate

To calculate FGF:

- FGF = minute volume (MV) x circuit factor (CF)
  - MV = tidal volume (TV) x respiratory rate (RR)
  - TV = 10-20ml/kg
- FGF estimated shortcut = 200ml/kg/min

*Note: **For circuit factors, see next page**

Breathing Systems

- Deliver oxygen and volatile agent
- Remove carbon dioxide and waste gases
- Provide assisted ventilation

Types of Breathing Systems

- Non-Rebreathing (NRB)
  - Constant oxygen flow on flowmeter
  - Fresh gas is always delivered
  - Patient receives reliable concentration of volatile agent
  - Low resistance (no valves or carbon dioxide absorber)
  - Many different types and tubing sizes
  - Delivers dry and cold gas (compressed oxygen)
  - Due to higher FGF required; can be uneconomical, environmental pollution
- Rebreathing (RB)
  - Varied oxygen flow
  - Contains a carbon dioxide absorber allowing a lower FGF
  - Economical
  - Decreases patient loss of heat and moisture
  - Adult and paediatric tubing sizes

Going with the flow: Understanding Anaesthesia Breathing Systems

WATCH NOW ON-DEMAND:

https://bit.ly/2W11Cgf

Breathing System	**Type**	**Circuit Factor** (no capnography)	**Fresh Gas Flow**	**IPPV?**
Paediatric T Piece	NRB	2.5	500-600ml/kg/min	Yes
Bain	NRB	2.5	200-400ml/kg/min	Yes
Lack	NRB	1	200ml/kg/min	Yes, if FGF increased
Circle	RB		100ml/kg/min for 10mins Then 0.5-1L/min	Yes
Humphrey ADE	NRB (A mode)	0.5	2L/min for 1 minute Then 0.5L/min	Yes
Humphrey ADE with CO_2 absorber	RB		3L/min for 2 minutes Then 0.5L/min	Yes