MANAGEMENT OF THE PATIENT IN THE ANAESTHETIC SETTING

Nuts and Bolts

Breathing Systems

Edge Hill University

Kevin Henshaw Module Lead
henshawk@edgehill.ac.uk

Paul Rawling Module Deputy Lead
rawlingp@edgehill.ac.uk

Breathing Systems

The anaesthetist will deliver a mixture of anaesthetic gases and volatile agent to the patient via a breathing system. This breathing system is attached to the common gas outlet of the anaesthetic machine. The function of the breathing system is gas delivery and removal of waste gases (Carbon dioxide). Carbon dioxide is either washed away by fresh gas flow via the gas scavenging system or, in the case of the circle system, absorbed by being passed through a soda lime cannister.

A number of classification systems have been developed to help anaesthetists understand the physics of each type of breathing system. How useful these classifications are to an anaesthetic practitioner in practice is debatable and we argue that a commonsense approach to breathing systems is probably more practicable.

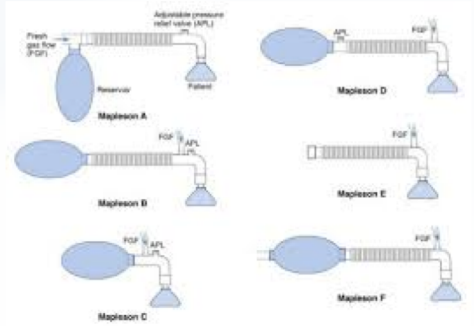
Breathing Systems & Classification

The most commonly (and easiest) used is the 'rebreathing/non-rebreathing' system of classification. This is based on the behaviour of the expired gases after they have been breathed out. We know that 5% CO2 is expired and if all of that 5% is either released from the system or absorbed by soda lime we have a non-rebreathing system. If however, the expired gases are mixed with the fresh gases and inhaled in the next breath we have re-breathing and subsequently our patient is receiving a lower percentage of O2 than indicated on our O2 analyser.

Whilst re-breathing may be a feature of some systems it's significance or effect is dependent on the fresh gas flow (washing expired gases down the expiratory limb) and the respiratory pattern of each patient.

Resources

- Introduction to Breathing Circuits



- Bag Valve Mask basic properties

Preoperative Airway Management

Resources

- Endotracheal Tubes

- Catheter Mount

Resources

- Nasal Pharyngeal Airway

- Oro Pharyngeal Airway