Perioperative monitoring

- General anaesthesia removes ability of patient to protect himself
- Safety and physiological control becomes the responsibility of the anaesthetist
- Anaesthetist needs to
    - Maintain airway and oxygenation
    - Preserve circulation
    - Prevent hypothermia
    - Prevent injury
    - Monitor during anaesthesia

Airway management

- General anaesthesia removes muscle tone
- Without assistance airway will be compromised
- Methods of maintaining airway include
    - Manual methods (e.g. Jaw thrust)
    - Guedel airway
    - Laryngeal mask
    - Endotracheal tube
    - Tracheostomy tube

Complications of endotracheal intubation

- Failure to intubate and loss of airway control
- Unrecognised oesophageal intubation
- Accidental intubation of a main bronchus
- Trauma to the larynx, trachea or teeth
- Pulmonary aspiration
- Disconnection or blockage of the tube
- Tracheal stenosis

Hypothermia

- Hypothermia develops rapidly during general anaesthesia
- Occurs due to:
    - Radiation of body heat
    - Vasodilatation
    - Infusion of cold fluids
    - Evaporation from open body cavities
- Hypothermia develops more rapidly in children
- Heat loss can be reduced by use of:
    - Warming blanket
    - Warm intravenous fluids
    - Warm fluid to irrigate body cavities

Monitoring during anaesthesia

- The continuous presence of an adequately trained anaesthetist is essential
- Accurate monitoring of vital signs is obligatory

- Facilities for cardiopulmonary resuscitation should be immediately available
- Monitoring of the following is considered essential for all patients:
    - Temperature
    - Heart rate
    - Blood pressure
    - ECG
    - Oxygen content of inspiratory gas mix
    - End-tidal carbon dioxide
    - Pulse oximetry
- Alarms should indicate
    - Oxygen supply failure
    - Ventilator disconnection
- The following may be considered for major surgery
    - Invasive blood pressure monitoring
    - Central venous pressure
    - Urine output

Recovery from anaesthesia

- Recovery from anaesthesia should be monitored by a suitable trained nurse
- Should occur in a properly equipped recovery area
- Anaesthetist should be immediately available
- Causes of failure to breath after general anaesthesia include:
    - Obstruction of airway
    - Central sedation due to opiates or anaesthetic agent
    - Hypoxia
    - Hypercarbia
    - Hypocarbia due to overventilation
    - Persistent neuromuscular blockade
    - Pneumothorax
    - Circulatory failure leading to respiratory arrest