

# Ventilation during anaesthesia

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Mechanical ventilation is required when the patient's spontaneous ventilation is inadequate or when the patient is not breathing because of the effects of the anaesthetic, analgesic agents or muscle relaxants. In volume control ventilation, a preset volume is delivered by the machine irrespective of the airway pressure. The pressure generated will be, in part, dependent on the resistance and compliance of the airway. In laparoscopic surgery requiring the Trendelenburg position (the patient is positioned head down), morbidly obese patients and those with lung disease, this may result in excessive pressures being developed, which may lead to barotrauma (pneumothorax). In pressure control mode the ventilator generates flow until a preset pressure is reached. The actual tidal volume delivered is variable and depends on airway resistance, intra-abdominal pressure and the degree of relaxation. Positive end-expiratory pressure (PEEP) is often applied to help maintain functional residual capacity. This avoids lung collapse by opening collapsed alveoli and maintains a greater area of gas exchange, so reducing vascular shunting.

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