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Question :- Write Notes on Ventilation  
of lungs?

Mechanical Ventilation :-

Mechanical ventilation, or assisted ventilation, sometimes abbreviated as IMV, is the medical term for artificial ventilation where mechanical means are used to assist or replace spontaneous breathing. This may involve a machine called a ventilator, or the breathing may be assisted manually by a suitably qualified professional, such as an anaesthesiologist, Registered Nurse (RN), paramedic, or in some parts of the United States

by a respiratory therapist (RT), by compressing a bag valve mask device.

Mechanical ventilation is termed "invasive" if it involves any instrument inside the trachea through the mouth, such as an endotracheal tube or the skin, such as a non-invasive ventilation in appropriately selected conscious patients.

The two main types of mechanical ventilation include positive pressure ventilation, where air (or another gas mix) is pushed into the lungs through the airways, and negative pressure ventilation where air is usually, in essence, sucked into the lungs by stimulating movement of the chest. Apart from these two main types,

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there are many specific modes of mechanical ventilation and their nomenclature has been revised over the decades and the technology has continually developed.

Uses :-

Mechanical ventilation is indicated when the patient's spontaneous breathing is inadequate to maintain life. It is also indicated as prophylaxis for imminent collapse of other physiological functions, or ineffective gas exchange in the lungs. Because mechanical ventilation serves only to provide assistance for breathing and does not cure a disease, the patient's underlying condition should be identified and treated in order to resolve over time. In

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In addition, other factors must be taken into consideration because mechanical ventilation is not without its complications.

In general, mechanical ventilation to protect the airway / reduce work for breathing and for correct blood gases.

Common specific medical indications for use include :

- Acute lung injury, including acute respiratory distress syndrome (ARDS) and trauma.
- Apnea Apnea with respiratory arrest, including cases from intoxication.
- Acute severe asthma requiring intubation.

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- Acute (severe) or chronic respiratory acidosis, most commonly with chronic obstructive pulmonary disease (COPD) and obesity hypoventilation syndrome.
- Acute respiratory acidosis with partial pressure of carbon dioxide ( $P_{CO_2}$ )  $> 50$  mmHg and pH  $< 7.35$ , which may be due to paralysis of the diaphragm due to Guillain-Barré syndrome, myasthenia gravis, motor neuron disease, spinal cord injury, or the effect of anaesthetics and muscle relaxants.
- Hypotension including sepsis, shock, congestive heart failure.
- Neurological diseases such as muscular dystrophy and amyotrophic lateral sclerosis.