

**PHARMACOLOGY-III**  
**UNIT-I**  
**TOPIC: RESPIRATORY STIMULANTS**



**Centurion**  
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*Shaping Lives...*  
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**Prepared By**  
**Sucharita Babu**  
**Assistant Professor**  
**School of Pharmacy and Life Sciences,**  
**Centurion University of Technology and Management**

## **Respiratory stimulants**

(Analeptics)

These are drugs whose primary action is to stimulate the CNS globally or to improve specific brain functions.

The CNS stimulants mostly produce a generalized action which may, at high doses, result in convulsions.

These drugs stimulate respiration and can have resuscitative value in coma or fainting.

A respiratory stimulant is primarily used as non-invasive ventilation (Non invasive ventilation provides ventilatory support to a patient through the upper airways) as a means to help increase the urge to breathe.

It works by stimulating the central nervous system, resulting in an increase in respiratory rate and tidal volume, which is the amount of air that is inhaled or exhaled during a normal breath. They do stimulate respiration in sub convulsive doses, but margin of safety is narrow; the patient may get convulsions while still in coma. Mechanical support to respiration and other measures to improve circulation are more effective and safe.

The role of analeptics in therapeutics is very limited. Situations in which they may be employed are:

- (a) As an expedient measure in hypnotic drug poisoning until mechanical ventilation is instituted.
- (b) Suffocation on drowning, acute respiratory insufficiency.
- (c) Apnoea in premature infant.
- (d) Failure to ventilate spontaneously after general anaesthesia.

### **Doxa pram**

It acts by promoting excitation of central neurones. At low doses it is more selective for the respiratory centre than other analeptics. Respiration is stimulated through carotid and aortic body chemo-receptors as well. Falling BP rises. Continuous i.v. infusion of doxapram has been found to abolish episodes of apnoea in the premature infant not responding to theophylline.

Dose: 40-80 mg i.m. or i.v.; 0.5–2 mg/kg/hr i.v. **infusion.**