

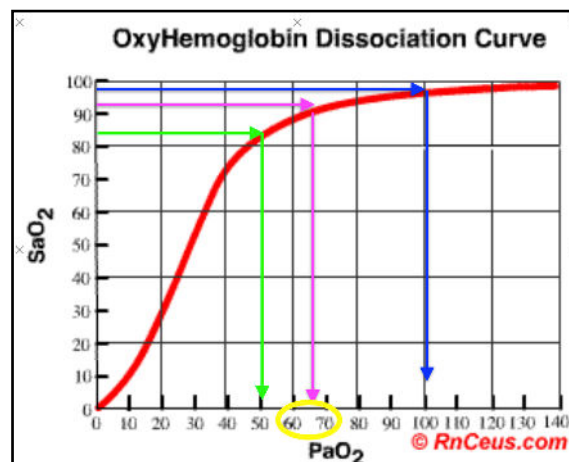
## Pulse Oximetry

### What it does:

- Measures the saturation of haemoglobin with oxygen
- Provides a pulse rate
- May display a waveform

### What it does not do:

- Monitor the adequacy of ventilation
- Carbon dioxide levels in blood
- Depth of anaesthesia
- Measure perfusion



***Use pulse oximetry throughout anaesthesia to ensure good oxygenation.***

***Continue to use it in recovery when patients are taken from 100% oxygen to 21% oxygen.***

## **The pulse oximeter can give false readings when:**

- Patient movement
- Poor systemic perfusion - hypotension
- Poor local perfusion - pulse oximeter clip too tight.
- Use of Alpha 2 agonists e.g. medetomidine, dexmedetomidine
- Pigmentation
- Interference from ambient light.

## **Causes of Hypoxaemia:**

1. Low Inspired Oxygen - airway obstruction, oxygen supply failure.
2. Hypoventilation - on room air. Low tidal volume, patient positioning.
3. Diffusion Impairment - unable to move oxygen into the blood. Fluid, inflammation or fibrosis.
4. Ventilation/Perfusion Mismatch (V/Q) - Areas of lung perfused with blood but not aerated with oxygen. De-oxygenated blood goes back into system.
5. Shunt - pulmonary or cardiac causes. Heart defects, pneumonia, severe V/Q mismatching.

## **Treatment of Hypoxaemia:**

- A. Check the pulse oximeter probe is reading correctly. Try a wet swab on the tongue.
- B. Check your patient - MM colour, is the airway clear?
- C. Check the oxygen supply is ok.
- D. Provide oxygen - mask, flow-by, nasal cannula, oxygen cage.
- E. Check perfusion / blood pressure is ok.