ETCO₂ MONITORING IN VENTILATORS

What is it?
The air we inhale contains oxygen. The gas mixture flows into the lungs, enters the blood by diffusion and is transported to the cells by perfusion.

The cells take energy from the oxygen and generate CO₂ as an end product.

CO₂ is then transported by the cardiovascular system, diffused into the lung and breathed out.

How is it measured?
A ventilator can measure the difference in infrared absorption between the patient exhalation (sample gas) in the hoses and a reference value (calibration gas). The signal from the sensor is sent electronically for instant processing and display.

Why is it relevant?
With a simple graph of CO₂ monitoring (Capnograph) we have a first overview on how ventilation is performing in the lungs of a patient.

Why is it helpful to improve outcome?
Data coming from the patient are essential to adapt the settings of the ventilator.

It is essential to measure CO₂ production in real time as it is the end product when cells take energy from oxygen.

Reasons why etCO₂ (end tidal CO₂) decreases or increases can be mechanical, respiratory or circulatory.