ALPE essential
A Unique Decision Support System
for Pulmonary Gas Exchange Diagnostic
Accurate Characterization of Pulmonary Gas Exchange in a Matter of Minutes

Traditional methods of diagnostic a full pulmonary function are time-consuming and costly. In addition, these methods do not give adequate insight in the patient's pulmonary gas exchange capabilities. Moreover, providing only partial insight, these methods may lead to false assessments of surgical complications.

ALPE essential is the first and only product that lets you perform accurate, cost-effective characterization of pulmonary gas exchange – with one non-invasive measurement in less than 8 minutes.

The patient breathes through a mask coupled to a respiratory unit. Arterial oxygen saturation is monitored with a built-in pulse oximeter, and expired oxygen is measured with an oxygen and flow sensor. The gas exchange is characterized via the patented ALPE algorithm and expressed as O2-loss and Shunt. The whole procedure is non-invasive and takes less than 8 minutes and can be performed bedside sparing the patient and clinician any discomfort or stress.

Safe, User-friendly and Non-invasive Bedside Examination

»ALPE essential is nothing short of a revolution for health care professionals – especially anaesthesiologists – to optimize the complete anaesthesia process pre- and postoperative.«

»ALPE essential characterizes the pulmonary gas exchange via a relatively simple procedure where inspired oxygen level is varied in 3-5 steps in the interval 14-40%.«
ALPE essential is a Clinical Diagnostic Pulmonary Device for Anaesthesiologists

- Accurate Characterization of Pulmonary Gas Exchange in a Matter of Minutes
- Safe, User-friendly and Non-invasive Bedside Examination
- Optimal Preoperative Pulmonary Diagnostic for patients with shortness of breath or for patients undergoing complicated surgery
- Postoperative Pulmonary Diagnostic of patients with low oxygen saturation
- Minimize and document Pulmonary complications during the Anaesthesia process – Optimal Pulmonary Quality Assurance
Differentiated Preoperative diagnostic of Pulmonary Gas Exchange

Optimal preoperative pulmonary diagnostic for patients with shortness of breath or for patients undergoing complicated surgery.

Most traditional pulmonary procedures and tests are limited to assessing whether the patient is operable, and do not give insight into the patient’s oxygenation capabilities. Nevertheless, such preoperative insight is crucial when dealing with patients with shortness of breath or patients undergoing complex surgery.

With ALPE essential, you can perform targeted preoperative treatment based on the patient’s pulmonary gas exchange expressed as $O_2$ loss and Shunt with the purpose of minimizing perioperative and postoperative oxygenation issues.

»ALPE essential lets you perform pulmonary diagnostic specifically targeted at preoperative oxygenation issues.«
New and optimal Postoperative Pulmonary Diagnostics

New Postoperative pulmonary diagnostic of patients with low oxygen saturation.

Today, there are no clinically valid pulmonary non-invasive methods or test of assessing the patient’s with abnormally low oxygenation capability postoperative and in connection with the patient being discharged from the recovery ward. This is a serious issue as it may lead to incorrect treatment and extended hospitalisation.

ALPE essential is a clinical diagnostic device that provides insight into the reason for the pulmonary dysfunction and whether the dysfunction is a O2 –loss, e.g. a barrier that may be treated with oxygen, or a Shunt that can be treated by means of pulmonary physiotherapy (recruitment, CPAP, etc.).
Complete pulmonary evaluation during the Anaesthesia process

Minimize and document pulmonary complications during the anaesthesia process – Optimal Pulmonary Quality Assurance.

Accreditation and documentation go hand in hand, and the requirements for documentation of the anaesthesia process are higher than ever. However, quality assurance is currently difficult and fragmented, because methods are limited to single measurements and partial documentation.

ALPE essential lets you perform serial measurements and document everything in one single report. This report is the perfect starting point for documenting the anaesthesiologist’s perioperative and postoperative focus on, and treatment of, the patient’s oxygenation capacity.

The figure shows if the pulmonary dysfunction is related to O2-loss or Shunt using a unique oxygen titration technique.

Mermaid Care’s vision is to make ALPE (Automatic Lung Parameter Estimation) the International Clinical Standard for diagnosing and characterizing the Pulmonary Gas Exchange. Our expertise in Pulmonary Gas Exchange Diagnostic is helping healthcare professionals in new ways to predict, diagnose and treat disease.
Accurate, non-invasive cost-efficient measurement of pulmonary gas exchange

ALPE essential – non-invasive measurement of pulmonary gas exchange expressed as O2-loss and Shunt.

Diffusion barriers
= O2 - loss increased

No ventilation
= Shunt increased

Normal: O2-loss = 0
Shunt = 0

References


ALPE essential is a Clinical Diagnostic Pulmonary Device for Anaesthesiologists

ALPE essential characterizes the pulmonary gas exchange non-invasively and is helping the clinician to optimise the anaesthesia process.

- Preoperative for patients with shortness of breath and for patients undergoing complex surgery, e.g. abdominal and thorax surgery
- Postoperative planning and monitoring of a differentiated treatment of patients with abnormally low oxygen saturation
- Minimise and document postoperative pulmonary complications and thereby live up to rising accreditation requirements

ALPE essential is CE-marked and produced and marketed by Mermaid Care in Denmark.

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