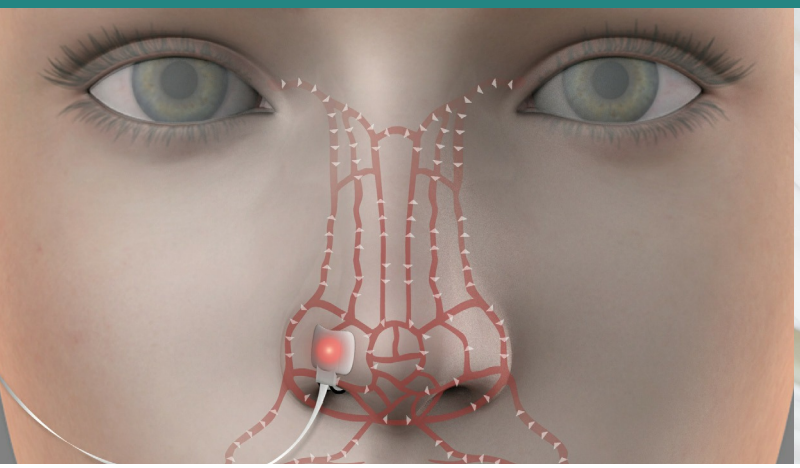
Pentland Medical



The Nasal Alar SpO_2 Sensor

Accurate long-term pulse oximetry monitoring with greater patient comfort, lower cost and application beyond the ICU.

The Nasal Alar SpO_2™ Sensor

Attached to the nasal ala, the fleshy part of the side of the nose, a unique monitoring site for pulse oximetry. This site is fed by both the external and internal carotid arteries; the latter also supplies blood to the brain. The rich vascular supply to the ala provides a strong, reliable signal, even when it is difficult to get a signal at the fingertips.

This new sensor is compatible with the majority of pulse oximetry monitors used in many healthcare settings. Established in the USA as a first choice for a variety low perfusion conditions. Pentland Medical is now marketing this product in the UK.

Oxygen Supplementation in Patient Treatment

Many acute and chronic medical conditions are associated with hypoxia and require supplemental oxygen therapy. Acute conditions include asthma attacks, pneumonia or respiratory distress syndrome (RDS) and oxygen bronchopulmonary dysplasia (BPD) in premature babies; chronic conditions include chronic obstructive pulmonary disease (COPD), heart failure and sleep apnoea. Supplemental oxygen is usually administered through a nasal continuous positive airway pressure (NCPAP) machine, a nasal tube or a ventilator.

Pulse Oximetry in the Evaluation of Blood Oxygenation

It is essential to monitor the requirements for and effects of oxygen supplementation as both insufficient oxygen and excess oxygen can be harmful. Pulse oximetry is a non-invasive method used to measure oxygen saturation in peripheral tissues, usually using a sensor attached to the fingertip.

The pulse oximeter consists of a clip-like sensor housing a light source, a light detector, and a microprocessor. Passing two wavelengths of light (red and infra-red) through the fingertip to the photodetector, the device measures the changing absorbance. As oxygen-rich haemoglobin absorbs more infrared light and oxygen-poor hemoglobin absorbs red light, the microprocessor calculates the difference and converts it oxygen saturation.

Use and Advantages of the *Nasal Alar SpO_2 Sensor*

Unlike fingertip sensors, where signals can easily be lost (1), the Nasal Alar SpO_2 Sensor detects changes in oxygen saturation from the nasal ala, a highly vascular region that is fed by both the external and internal carotid arteries, providing strong and reliable photoplethysmography signals that respond rapidly to changes in arterial oxygen saturation.

The nasal alar site is very robust and offers the following advantages:

- Lack of sympathetic tone means no signal loss due to reduced temperature or anxiety.
- Minimal effects by diminished peripheral perfusion.
- Less susceptible to sensor interference from ambient light.
- Consistent accuracy at very low oxygen saturations.
- Less likely to be dislodged.
- Easily accessed during surgery.
- Comfortable and easily removed and reapplied for use during the patient's hospital stay (2).
- Easily repositioned due to non-adhesive attachment.

Clinical Evaluation of the *Nasal Alar SpO_2 Sensor*

Several recent studies support the feasibility and accuracy of Nasal Alar SpO_2 Sensor beyond its role in the operating theatre, for patients with acute, chronic or long-term medical conditions (3).

A usability and acceptance study in a non-hospital setting showed that 50 subjects could wear the sensor for seven days (4), and when compared to a finger pulse oximeter, the Nasal Alar SpO_2 Sensor was more comfortable and interfered less with daily living activities (4). Furthermore, there were no reported complications associated with skin pressure complications (5,6).

Cost: *Nasal Alar SpO_2 Sensor*

The Nasal Alar SpO_2 Sensor costs less than £20), patient studies have shown that they are durable, indicating a significant long-term cost saving (6); although digital and forehead sensors can initially cost less, respectively, with the average stay in ICU being 3.8 days (in the USA), these devices normally require replacement (6) incurring greater costs long-term. The Alar sensor is a single patient device good for continuous use up to 28 days. Simply, check the sensor every 8 hours and change sides every 24 hours.

In conclusion, these results indicate that the Nasal Alar SpO_2 Sensor can be used comfortably, safely, effectively and at relatively low cost, not only in the operating room during anaesthesia or in intensive care but also in a variety of situations within and outside the hospital.

See references here.

Website.

For further information on the benefits Alar can offer your facility, Phone: 0131 467 5764 E-mail: mail@pentlandmedical.co.uk