

## Frequently asked questions (FAQ'S): Pulse Oximeter

**Q1. At what site should the probe be placed for pulse oximetry?**

The probe can be positioned on the fingers, toes, hand, foot, or wrist of the neonate. Other sites will depend on the infant's size. Newer probes allow for forehead placement. The placement of ear lobe probes is particularly useful in hypo perfusion states.

**Q2. Can ambient light interfere with pulse oximetry readings?**

Yes, ambient light containing the red spectrum may interfere with accurate readings from the oxygen saturation monitor. Light from heat lamps and phototherapy lights has been reported to skew the readings. The high intensity of light emitted from these sources masks the small changes in light transmission from the probe. The remedy is to shield the probe from the ambient light by black paper (e.g. carbon paper) or black polythene or aluminum foil.

**Q3. How can I determine the accuracy of the pulse oximeter?**

Most pulse oximeters have a visual representation of the pulse intensity as well as a digital display of the pulse. The pulse display should be within three beats per minute of the display on the cardiac monitor. The bar pulse display or pulse waveform must cover half of the total display for an accurate reading. Differences greater than this will not reflect accurate oxygen saturation values because the probe is not detecting the arterial pulsations adequately or accurately. Some newer monitors have integrated the ECG complex with the oxygen saturation probe. In pulse oximeters representing the signal as waveforms the morphology of the waves should be looked at which will point towards the accuracy of the signal pick up by the probe.

**Q4. Which infants can be monitored using the oxygen saturation monitor?**

The oxygen saturation monitor is reliable, practical, and accurate for use in infants with a wide range of birth weights, gestational age, postnatal ages and heart rates.

**Q5. What is purpose of pulse oximetry?**

This is noninvasive method of monitoring oxygen saturation and heart rate. One can see the trends during preceding periods.

**Q6. Are there any complications from using the oxygen saturation monitor?**

In the newborn population, there are no major complications from oxygen saturation monitoring when the neonatal probes are used as indicated. But

complications could arise though pulse oximetry is a non invasive device. Burns could occur resulting from electrical short circuiting. Limb ischemia can occur if the probe is applied too tight, particularly in an edematous limb. And if one resorts to erroneous reading based management.

**Q7. How do I clean/sterilize the probe after use on one baby and before being used on another?**

Cleanse the probe with alcohol, let it dry before using on another baby.

**Q8. What are the responsibilities of staff for using pulse oximetry?**

- (1) Calibrate with arterial blood gases if applicable for model and brand
- (2) Select the appropriate sized probe, and locate a position for monitoring
- (3) Place the probe such that the light source and photo-detector are opposite each other
- (4) Set monitor alarms in accordance with the unit policy
- (5) Document monitor readings and FiO<sub>2</sub> every hour and with each blood sample drawn for gas analysis
- (6) Change probe site to avoid skin breakdown
- (7) Proper disinfection to avoid cross infection

**Q9. What should one do if there are non uniform waves or blank display?**

In case of blank display or non uniform waveforms the causes could be many like low perfusion, motion, too much light presence of blood pressure cuff on the arm or just an error in probe fixation. These interfere with the arterial signal pick up by the probe. Hence the causes should be actively be looked for and corrected.