

User Manual (English)

Ver.1.0

Fingertip Pulse Oximeter

This Fingertip Pulse Oximeter is a kind of innovated medical device with non-invasive and continuous features for artery SPO₂ and PR detection. Being portable, it is able to measure SPO₂ and PR values quickly and precisely.

General Description

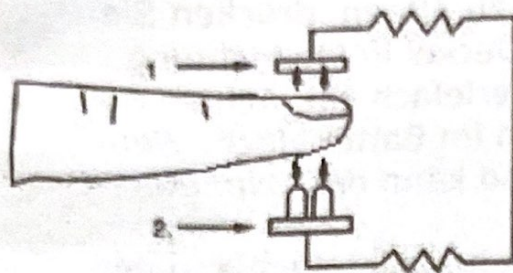
Haemoglobin Saturation is the percentage between the capacity of Oxyhemoglobin (HbO₂) that compounded with oxygen and that of all combinativable haemoglobin (Hb) obin (HbO₂) in blood. In other words, it is the saturation of Oxyhemoglobin in blood. It is a very important physiological parameter for Respiratory and Circulation Systems. Many respiratory diseases could reduce haemoglobin saturation in human blood. Moreover, factors such as Automatic Organic Regulation Malfunction caused by anaesthesia, trauma resulted from major operation and some medical examination can also cause problems in oxygen supply, which might reduce human haemoglobin saturation. As a result, such symptoms as megrim, vomiting and asthenia might appear to patients. Hence, it is very important to know hemoglobin saturation of patient timely in clinical medical aspects.

The fingertip pulse oximeter features in small volume, low power consumption, convenient operation and portability. It is only necessary for patient to put one finger into fingertip photoelectric sensor for diagnosis, and the display screen will directly show measured value of hemoglobin saturation. It has been proved in clinical experiments that it possesses rather high precision and repeatability.

Measurement principle

The principle of the oximeter is as follows: An experience formula of data process is established by exerting Lambert Beer Law according to Spectrum Absorption Characteristics of Reductive hemoglobin(R Hb) and oxyhemoglobin (O₂ Hb) in glow and near-infrared zones. Operation principle of the instrument is to combine Photoelectric Oxyhemoglobin Inspection Technology with Capacity Pulse Scanning and Recording Technology, so that two lights with different wavelength (660nm glow and 940nm near infrared light) can be focused onto human nail through perspective clamp finger-type sensor. Then measured signal can be obtained by a photosensitive element, information acquired through which will be shown on two groups of LEDs through process in electronic circuits and microprocessor.

Diagram of Operation Principle



1. Infrared-ray receiving tube
2. Infrared-ray transmitting tube

Precautions for use

1. Do not use the Fingertip Pulse Oximeter together with MRI or CT equipment.
2. Explosion hazard: Do not use the Fingertip Pulse Oximeter in an explosive atmosphere.
3. The Fingertip Pulse Oximeter is intended only as an adjunct in patient assessment. Doctors should make diagnosis in conjunction with clinical manifestation and symptoms.
4. Check the Fingertip Pulse Oximeter sensor application site frequently to make sure that the circulation and skin integrity of patient are under good condition.
5. Do not stretch the adhesive tape while applying the Fingertip Pulse Oximeter sensor. This may cause inaccurate reading or skin blisters.
6. Please read the manual carefully before your operation.
7. The Fingertip Pulse Oximeter has no SpO₂ prompt, it is not for continuous monitoring.
8. Prolonged use or the patient's condition may require changing the sensor site periodically. Change sensor site and check skin integrity, circulatory status, and correct alignment at least every 2 hours.
9. Inaccurate measurements may be caused by autoclaving, ethylene oxide sterilizing, or immersing the sensors in liquid.
10. Significant levels of dysfunctional hemoglobins (such as carboxyl-hemoglobin or methemoglobin) may cause inaccurate reading.
11. Intravascular dyes such as indocyanine green or methylene blue may cause inaccurate reading.
12. SpO₂ measurements may be adversely affected in the presence of high ambient light. Please shield the sensor area (with a surgical towel or direct sunlight, for example) if it is necessary.
13. Unexpected action may cause inaccurate reading.
14. Medical signal with high frequency or interference caused by defibrillator may lead to inaccurate reading.
15. Venous pulsations may cause inaccurate reading.