Pulse Oximeter

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A pulse Oximeter is a medical device used to measure the amount of oxygen saturation in a patient's body indirectly without taken a blood sample. It can also be used to measure the changes in the blood volume in the skin. The original oximeter, considered the first ever that was made by Milliken in the 1940s. Starting from 1970s, all oximeters were related to arterial hemoglobin saturation to vessel bed pulsation. This device is used to detect the amount of oxygen saturated in a patient's blood and the percentage of hemoglobin that is filled with oxygen.

Hemoglobin is a protein in the red blood cell that is responsible for transferring oxygen from lung to the rest of the body. Bone – marrow is an area in the body where fresh hemoglobin is produced. From wavelength graph, characteristic of oxygenated and deoxygenated hemoglobin shows that oxygenated absorb more infrared light and allows more red light, while deoxygenated absorb more red light and allow infrared light pass through.

Pulse oximeter can be used to take care of the infants, children and adults with cardiopulmonary diseases. It is also used to treat people with sleep apnea; this is when you stop breathing while sleeping.

Oximeter is not 100 percent efficient. For example: it won't work well for a person with poor gas exchange in the lungs even though the person may have 100 percentage oxygen while still suffering from respiratory acidosis due to excessive carbon dioxide. But regardless what the situation is, this device is capable of reading close to85 percent of the true level of oxygen saturation. There are also non – medical use oximeter that is sport versions designed for high altitude performance in sports and aviator markets.

Every year, pulse oximeter is been updated. In 2005, FDA approved a pulse oxidation that monitors carbon monometer level non-invasively by a company name Masino Corporation. The latest of this device uses digital signal processing to measure accurate measurement in clinical condition that was otherwise impossible. These include situation of low perfusion, patient motion and electrical interference

References:

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