

Oximetry

Oximetry is a technology that measures the oxygen level in the blood. This measurement is taken with a device called an oximeter. This device may also measure the heart rate (*pulse*). The measurement helps to assess:

- A person's oxygen level and breathing.
- The need or effectiveness of oxygen therapy or other treatments for lung disease.
- A person's ability to tolerate increased activity.

If a more accurate measurement is required, a blood sample will be taken.

How is an oximetry reading obtained?

- A tape sensor or clip with a light source and a light detector will be placed on an area of the body:
 - For children and adults, the sensor is usually placed on areas such as a finger, earlobe, or toe.
 - For infants, a tape sensor is usually placed around areas such as the sole of a foot or the palm of a hand.
- The device will beam light through the skin and blood. This cannot be felt.
- The levels of light received by the detector will be measured and the percentage of blood cells carrying oxygen will be calculated.



Oximetry may be used continuously or may be used at specified intervals.

Are there any risks associated with oximetry?

The risks associated with oximetry are rare. However, there is a risk of skin breakdown if a sensor is left in the same location for long periods of time.

What can affect the accuracy of the oximetry reading?

Certain factors or conditions can affect the accuracy of the measurements. They include:

- Extreme warmth or coolness of the area where the sensor is located.
- Excessive sweating of the area where the sensor is located.
- Shivering or too much movement.
- Poor blood flow to the area where the sensor is located.
- Low hemoglobin or red blood cell levels (*anemia*).
- A bone marrow disease that causes high levels of red blood cells, white blood cells, and platelets (*polycythemia vera*).
- Chronic smoking and recent inhalation of smoke or carbon monoxide.
- Bright, artificial lighting.
- Nail polish or artificial nails.
- Very dark skin.

What is the meaning of the oximetry reading?

The normal value depends upon your medical history and your elevation above sea level.

- Normal oxygen saturation levels are 90% or higher. Most healthy people have oxygen saturation levels between 95% and 100%.
- Low oxygen saturation levels are below 90%. This may happen in people with lung conditions, such as chronic obstructive pulmonary disease (COPD). In this case, supplemental oxygen therapy may be needed.

Summary

- Oximetry uses a small device to measure the oxygen level in the blood.
- The light in the sensor cannot be felt. The risks associated with oximetry are rare.
- Normal oxygen levels are 90% or higher. Most healthy people have oxygen levels between 95% and 100%.
- People with low oxygen levels may need supplemental oxygen.

This information is not intended to replace advice given to you by your health care provider. Make sure you discuss any questions you have with your health care provider.

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