Pulse oximetry

When we breathe, oxygen gets into the blood and then throughout the body. Ensuring adequate oxygen delivery to the blood is often a critical aspect of medical care. Pulse oximetry is a technique that estimates the approximate amount of oxygen in the blood without the need for a lab analysis.

What does it consist of?

The device consists of a specialized clamp that is placed on a finger of the hand. Additionally, there are devices that allow for clamping on the ear or the toes.

Before putting on the clamp:

- Remove any nail polish from the area where the clamp will be placed.
- Apply a massage to the finger, especially in cases of cold hands.
- Measurements should be made away from important light sources.

Once the clamp is securely positioned on the finger, it is essential to refrain from moving the finger or the device until the test results are obtained.

Please wait a few seconds for the values to stabilize and the result to be displayed.

Limitations

Some situations can lead to erroneous readings, such as:

- Painted nails.
- Intense ambient light.
- Insufficient blood flow due to a health condition.
- Anaemia.
- Cardiac arrhythmia.
- Hemoglobin alterations.

When is it used?

It is useful for evaluating patients who may have oxygenation problems:

- This procedure facilitates the **diagnosis** of patients with cardiac or respiratory emergencies.
- Pulse oximetry is also used to **monitor the treatment of acute illnesses and chronic conditions,** such as chronic obstructive pulmonary disease and heart failure.
- It also enables the determination of whether **oxygen treatment** is necessary, as well as monitoring its effectiveness.

Clinical interpretation

Pulse oximetry is a valuable tool for measuring blood oxygen saturation; however, its interpretation requires a clinical context:

- **Above 95%:** oxygen is normal. No immediate action required.
- **Between 90 and 95%:** oxygen is probably low. It has to be assessed by a health professional because the underlying disease and previous values have to be taken into account. For example, people with chronic respiratory problems may have values below 92% even though they remain stable.
- **Less than 90%:** oxygen is low. The case must be assessed to determine if oxygen treatment and hospital transfer is required.

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