What Is an SpO₂ Sensor?

Inas B. - 2026-11-26 - Health & Activity Tracking

An SpO₂ sensor measures estimated peripheral oxygen saturation, commonly referred to as blood oxygen saturation.

SpO₂ represents the estimated percentage of hemoglobin in the blood that is carrying oxygen. Smartwatches use optical sensing technology to estimate this value by analyzing how light interacts with blood beneath the skin.

This type of measurement is known as pulse oximetry. Dedicated medical pulse oximeters typically use red and infrared light to distinguish between oxygenated and deoxygenated hemoglobin. The optical signals are processed to calculate an estimated oxygen saturation percentage.

What does an SpO₂ reading represent?

An SpO₂ reading is expressed as a percentage. It represents an estimate of how much of the blood's hemoglobin is carrying oxygen.

What can affect SpO₂ measurements?

Several factors can influence the quality of an optical reading, including:

- Movement during measurement.
- Poor sensor-to-skin contact.
- Cold skin or reduced circulation.
- Tattoos, scars or skin characteristics that affect light transmission.
- Environmental and measurement conditions.

Smartwatch SpO₂ measurements are intended for general wellness and informational purposes. They are not medical diagnoses and should not be used as a substitute for a clinical pulse oximeter or professional medical advice.