

Understanding pulse oximetry

Tips for optimal oximetry performance

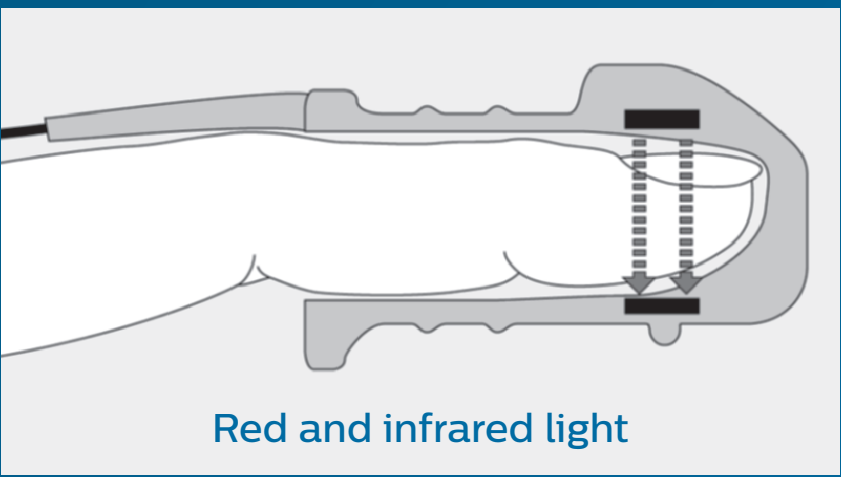
Situation		Recommendation
Anemia	Reduced red blood cells and hemoglobin (functioning hemoglobin may be saturated with O ₂ and SpO ₂ may appear normal, but tissue may still be O ₂ deprived)	Blood gases may need to be tested
Dyes	Affect light transmission through the blood	The following dyes may impact obtaining a reliable SpO ₂ : <ul style="list-style-type: none">• Methylene blue• Indiocyanine green• Indiocarmine Blood gases may need to be tested
Hypothermia	Can cause constriction of peripheral blood vessels	Warming the patient or sensor site may stimulate blood flow
Light interference	External light sources may cause inaccurate readings	Cover the sensor site with an opaque material to prevent incursion of external light
Medication	Medications that impact blood pressure also impact the perfusion at your pulse oximetry site	Measure SpO ₂ at a core site for patients who have low perfusion; perform blood gasses if SpO ₂ signal quality is poor
Movement artifacts	Movement may impact your signal quality	Select sensor sites that are least prone to motion
Nail polish	Nail polish and false fingernails may impact accurate readings	Switch to another unpolished nail or consider another site
Perfusion	Site chosen for the SpO ₂ measurement must be adequately perfused	Measure SpO ₂ at a core site or blood gases may need to be tested
Shock	May cause reduced blood supply to the limbs and extremities	Measure SpO ₂ at a core site or blood gases may need to be tested
Sensor site	Improper site selection may result in poor or inaccurate readings	<ul style="list-style-type: none">• Perform sensor site checks regularly and rotate sites frequently (refer to sensor's Instructions for Use)• The preferred application site for newborns immediately after birth is the right hand; SpO₂ values on the right hand (pre-ductal) are more representative for brain oxygenation• For accurate results, neonates with congenital heart disease may require special pre- and post-ductal sensor placement according to their anatomy

What is SpO₂?

- Noninvasive method of measuring the fraction of functional hemoglobin in arterial blood that is saturated with oxygen
- Also referred to as SaO₂
- Readings vary from 0-100% – healthy adults can range from 94-100%

How does pulse oximetry work?

Sensors are used on various parts of the body depending on the patient type. Within the sensor are light-emitting diodes that shine red and infrared light through the tissue. Some light passes through the application site, and a light-sensitive detector opposite the light source receives it.



How do I use SpO₂?

Many questions may be answered by referring to your instrument's and sensor's Instruction for Use.

General guidelines

Choosing an application site

- Good perfusion
- Low potential for generating motion artifact
- Comfortable for the patient
- Allows for easy application

Choosing a sensor

Sensor is determined by the size of the application site and the weight of the patient. Patient's medical condition may warrant using one type of sensor over another.

Infection control

For areas where infection control is a concern, disposable SpO₂ sensors are recommended.

The Philips family of sensors – sensors that last

Philips offers a complete family of sensors that provides continuous, noninvasive measurement of arterial oxygen saturation.

Reusable



M1191T, M1191B, M1191BL
(adult sensor)
• Patient size: > 50 kg (> 110 lb)



M1192A
(adult/pediatric sensor)
• Patient size: 15 – 50 kg (33 – 110 lb)



M1193A
(neonatal sensor)
• Patient size: 1 – 4 kg (2.2 – 8.8 lb)



M1194A
(adult/pediatric sensor)
• Patient size: > 40 kg (> 88 lb)

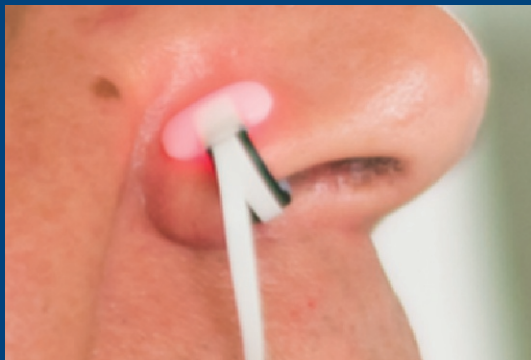


M1195A
(infant sensor)
• Patient size: 4 – 15 kg (8.8 – 33 lb)



M1196A, M1196T
(adult sensor)
• Patient size: > 40 kg (> 88 lb)

Disposable



989803205381
(adult/pediatric alar sensor)
• Patient size: > 15 kg (33 lb)



M1131A
(adult/pediatric sensor)
• Patient size: > 20 kg (44 lb)



M1132A
(infant sensor)
• Patient size: 3 – 10 kg (6.6 – 22 lb)



M1133A
(neonatal/infant/adult sensor)
• Patient size: < 3 kg (6.6 lb)
• Patient size: 10 – 20 kg (22 – 44 lb)
• Patient size: > 40 kg (> 88 lb)



M1134A (neonatal/infant/
adult non-adhesive sensor)
• Patient size: < 3 kg (6.6 lb)
• Patient size: 10 – 20 kg (22 – 44 lb)
• Patient size: > 40 kg (> 88 lb)