

# NELLCOR PULSE OXIMETER



### What is a pulse oximeter?

A pulse oximeter is a machine that monitors your child’s oxygen saturation and heart rate. **Oxygen saturation** is the amount of oxygen found in the blood and **heart rate** is the number of times the heart beats in a minute.

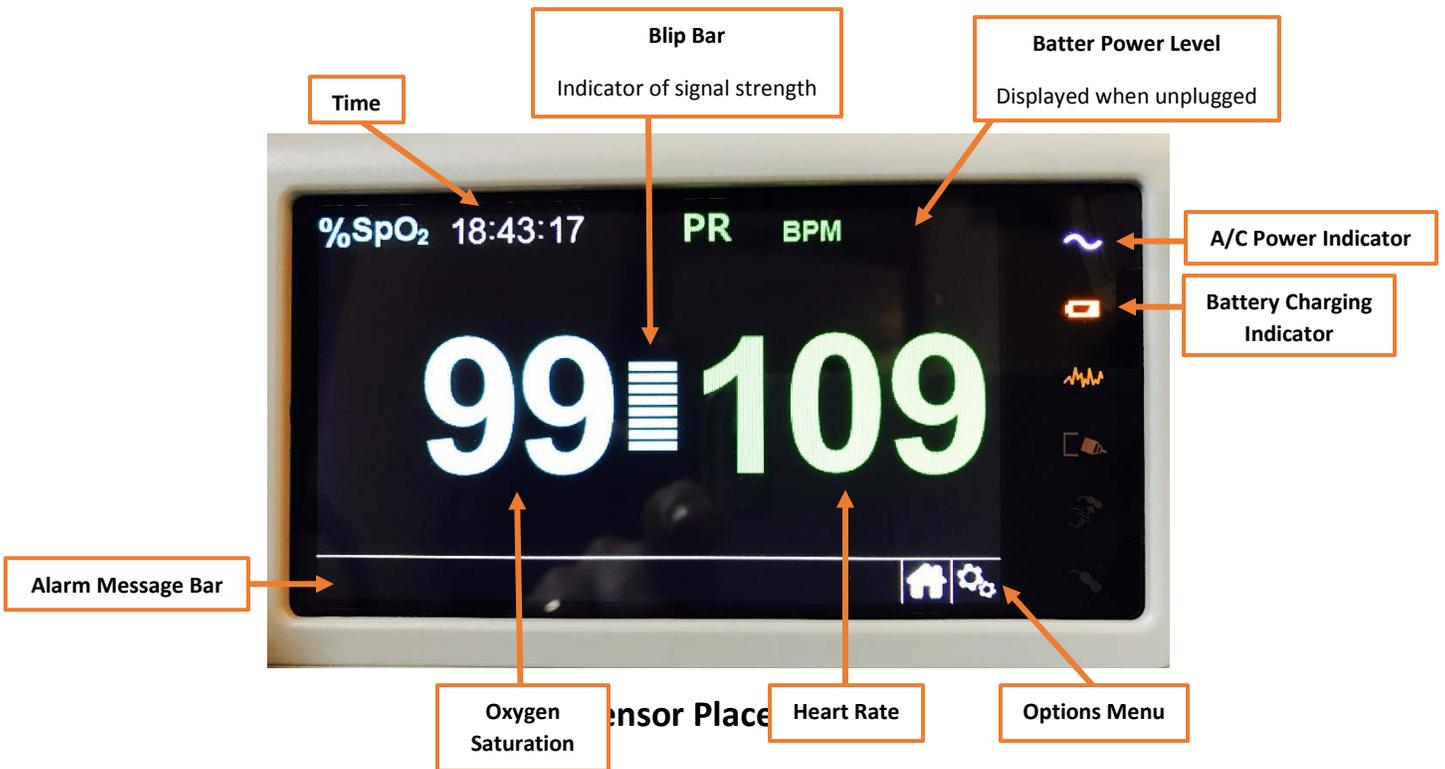
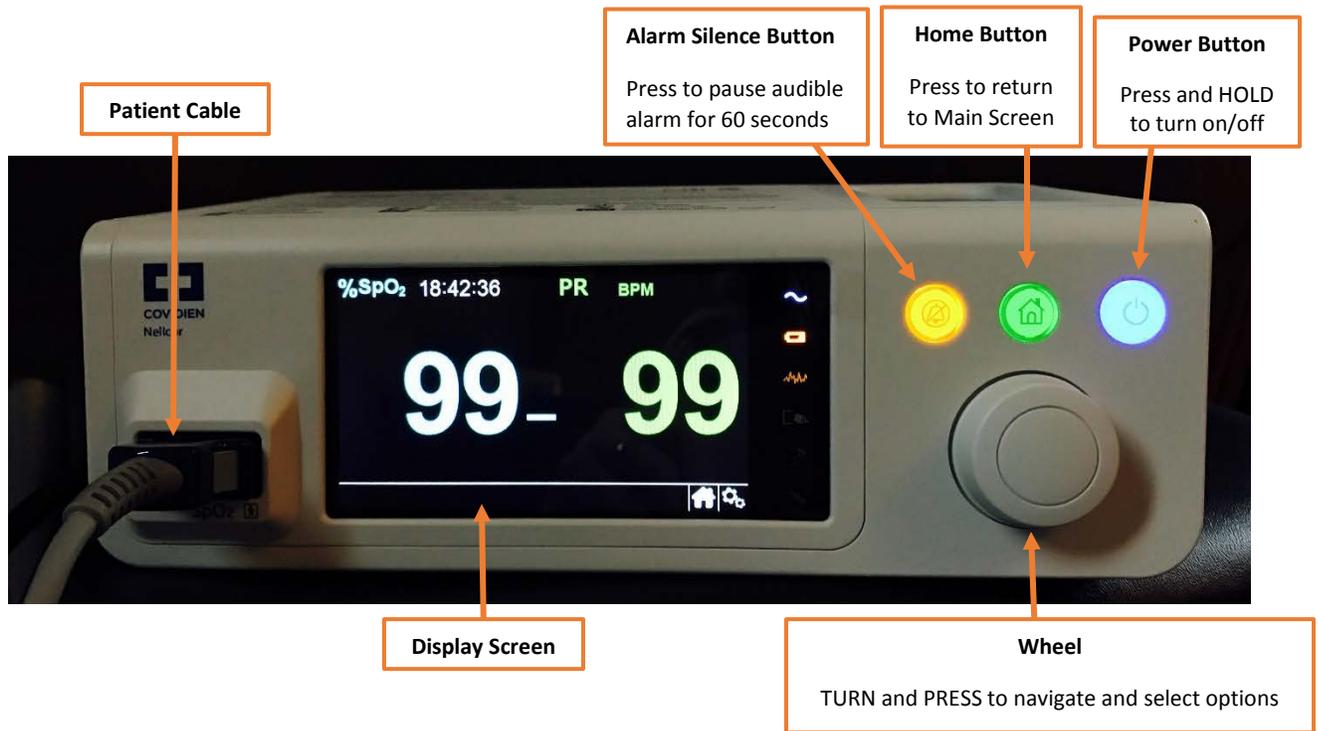
### Settings and Alarms

The use of a pulse oximeter in the home requires an order from your physician. The physician will also order settings or alarm limits that will be set by your Respiratory Therapist. These alarm limits will alert you when your child’s heart rate is too high or too low. They will also alert you when your child’s oxygen saturation is too low. Pulse oximeters are excellent tools to have in the home and will assist you in providing a safe environment for your child, but they do not replace your assessment.

***Remember, if you hear an alarm sound, always check to make sure that your child is alright!***

<p style="text-align: center;"><b>My Child’s Initial Ordered Settings:</b></p> <p>High Heart Rate: _____</p> <p>Low Heart Rate: _____</p> <p>High Saturation: _____</p> <p>Low Saturation: _____</p>
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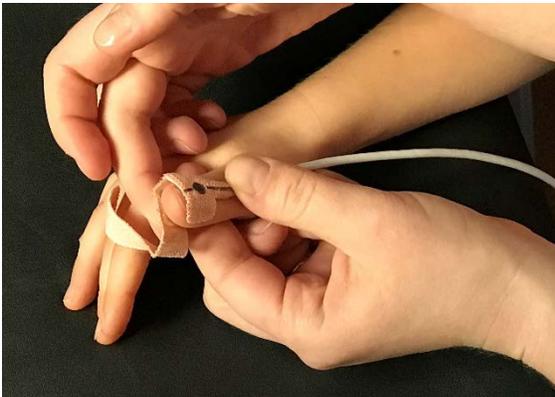
# The Pulse Oximeter Monitor



## Sensor Placement

### Keys to Good Sensor Placement

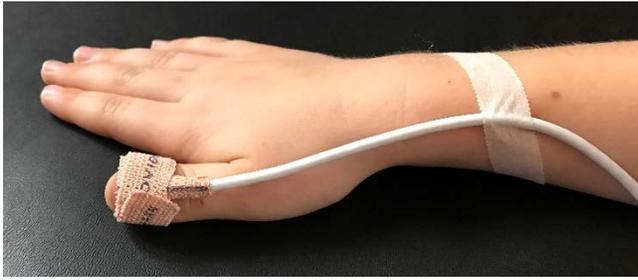
- 1) Rotate your site every 8 hours to prevent skin breakdown.
- 2) Do not leave gaps of air between the sensor and your child's skin.
- 3) The two red lights of the sensor need to line up with each other as evenly as possible.
- 4) Keep the sensor covered from ambient light (direct sunlight, direct lamp light, etc.).
- 5) After placing the sensor, secure the sensor cord to your child with coban or medical tape to prevent damage to the sensor cord.
- 6) Avoid the use of nail polish, creams, and lotions on sensor placement sites.



### Step 1

Place the red light of the sensor face down in the center of a clean nail. The wire of the probe should rest on the top of your child's hand or foot. Gently pull the wrap, so the other sensor touches the skin on the bottom of your child's finger or toe. Continue to pull the end of the wrap around your child's finger or toe to hold the sensors in place.

- ***Be careful not to wrap the sensor too tightly. Your child's skin should remain its usual color.***



## Step 2

Once the sensor wrap is secure, the sensor cord should be stabilized to prevent damage. This can be done by securing the sensor cord to your child's wrist or foot with coban or medical tape.



## Step 3

When placing the sensor on your child's foot, use a sock to help prevent the sensors from moving. Socks will also assist in more accurate oxygen saturation and heart rate readings by blocking the sensor from ambient light and keeping their extremities warm.

- ***Rotate your child's sensor placement site at least every 8 hours.***

**For your child's safety, DO NOT get sensors wet or submerge them in water.**

## Sensor Placement for Infants



### Step 1

Place the red light on the top of the foot.



### Step 2

Gently wrap the sensor with the bandage. Make sure the red light is on the top of the foot. Continue to wrap until the sensor is secure.

***Make sure that the sensor is secure.***



### Step 3

Secure the sensor with the sock.

***Rotate your child's position every 8 hours.***

**For your child's safety, DO NOT get sensors wet or submerge them in water.**

## Troubleshooting

Alarm/Problem	Action to Take
<p style="text-align: center;"><b>High Heart Rate</b></p> <p style="text-align: center;"><b>Low Heart Rate</b></p> <p style="text-align: center;"><b>Low Oxygen Saturation</b></p>	<ol style="list-style-type: none"> <li><b>1. Assess your child...</b> If your child is NOT breathing or there has been a change in skin color, <b>call 911</b> immediately.</li> <li><b>2. Is your child actively moving the sensor site?</b> Increased movement will cause the sensor to have a delayed or inaccurate reading.</li> <li><b>3. Is your child cold or is the sensor wrap too tight?</b> Having poor circulation or cold extremities will cause an inaccurate reading.</li> <li><b>4. Is your child upset?</b> When crying, a child's heart rate will increase. Depending on how long your child has been upset, he or she may become sweaty and displace the sensor.</li> <li><b>5. Look at the Blip Bar...</b> The blip bar should move up and down with an even rhythm. If you see low movement, check the sensor placement. It should have good contact with your child's skin.</li> <li><b>6. Move your sensor to a new location.</b></li> <li><b>7. If the alarm continues...</b> Place the sensor on yourself. If your values are appropriate, repeat steps 1-5.</li> <li><b>8. If you are still unable to get an accurate reading and you have tried all of the above...</b> Replace the sensor with a new one.</li> </ol>
<p><b>Low Battery</b></p>	<ol style="list-style-type: none"> <li><b>1. Plug into an A/C power source immediately.</b></li> <li><b>2. If the unit is currently plugged into a power source...</b> Verify that the power cord is securely plugged into the back of the unit and into a working electrical outlet. <u>Do NOT</u> use electrical outlets controlled by a wall switch. The A/C power indicator light should be illuminated.  <i>If battery has become completely drained of power, see instructions in the "Battery Section" of this handout.</i></li> </ol>
<p><b>Error Messages:</b></p> <p><b>"EEE010" or "EEE804"</b></p>	<ol style="list-style-type: none"> <li><b>1. Turn the pulse oximeter off by pressing and holding the Power Button.</b></li> <li><b>2. Disconnect patient cable from the monitor, disconnect the sensor from the patient cable, and remove the sensor from the patient.</b></li> <li><b>3. Turn the pulse oximeter on.</b></li> <li><b>4. Once the oximeter shows a "Connect Sensor" message, <i>in this order</i>: Connect the patient cable to the pulse oximeter, place a NEW sensor on the patient, and connect the NEW sensor to the patient cable.</b></li> <li><b>5. If the error message continues contact your homecare company.</b></li> </ol>

## Cleaning & Maintenance

<i>Device</i>	<i>Daily</i>	<i>Weekly</i>	<i>Every 6 Months</i>
<b>Pulse Oximeter</b>	<p><i>Frequently assess sensor site for redness, appropriate skin color, and blood flow.</i></p> <p><i>Rotate sensor site at least every 8 hours to prevent skin breakdown</i></p>	<p><i>Change sensor cable if necessary.</i></p> <p><i>Turn off and unplug the unit from the wall. Use clean damp cloth to wipe off the exterior of the unit and the patient cable.</i></p>	<p><i>Check the integrity of the unit, the power cord, the patient cable, and all cable connections.</i></p>

## Battery Life

### How long will my battery last?

When fully charged, the pulse oximeter should last about 5 hours. However, more frequent alarms will shorten the remaining battery life. Battery power should only be used for travel and emergencies. Always take your power cord with you and run the unit with A/C power whenever possible.

### How long does it take to charge my battery?

When you first receive the unit, it should be charged for at least 8 hours before utilizing battery power to monitor the patient. After the initial charge, it should only take about 5 hours to restore a fully depleted battery.

### My battery was fully depleted, what do I do?

At 15 minutes of remaining battery power, the unit will notify you with a yellow (moderate severity) alarm. At 5 minutes of remaining battery power, the yellow alarm will change to a red (high severity) alarm. When the battery has been fully depleted, the unit will shut down. If your unit should shut down, you must follow these steps:

1. Attach the power cord to the pulse oximeter and plug the unit into a working outlet.
2. Visualize the illumination of the "A/C Power" and "Battery Charging" lights on the front of the unit.
3. **DO NOT turn the unit ON for AT LEAST 3 MINUTES and monitor your child closely.**

After 3 minutes, turn the unit ON and verify that your child's alarm settings have not changed. If your child's settings have changed, contact your provider.