

# 6 HELPING YOU SOLVE CHALLENGES IN LABOR AND DELIVERY

Pulse oximetry can help you guide interventions in Labor and Delivery — or frustrate your efforts to respond effectively. The difference depends on the technology and its ability to post timely and accurate information in real-world conditions. See how **Nellcor™ pulse oximetry with Oximax™ technology** helps you solve six key challenges in the delivery room.

See how Nellcor™ pulse oximetry can support your neonatal clinical decisions. Visit: [Medtronic.com/PulseOxForNeonates](https://www.medtronic.com/PulseOxForNeonates)

**The Nellcor™ pulse oximetry monitoring system should not be used as the sole basis for diagnosis or therapy and is intended only as an adjunct in patient assessment.**

## 1 Speed to post

Seconds count in neonatal care decisions.<sup>1</sup> Don't lose them waiting for an accurate vital signs reading.

**Up to 12 seconds faster<sup>2</sup>**

Nellcor™ pulse oximetry has been shown to post on average up to 12 seconds faster than Masimo.<sup>2</sup>



## 2 Accurate pulse rates

Inaccurate pulse rate readings may guide clinicians to inappropriate or unnecessary interventions.<sup>3</sup>

**No deviation from ECG readings<sup>2,3</sup>**

Nellcor™ pulse oximetry showed no clinically significant difference from ECG reference.<sup>2,3</sup>



## 3 Motion†

Neonate motion can cause irregular venous blood flow that affects accurate monitoring.<sup>3</sup>

**95%+ specificity in measurements<sup>4</sup>**

Nellcor™ pulse oximetry was the first motion tolerant technology to comply with ISO 80601-2-61.2011.<sup>5</sup>



## 4 Low saturation†

Saturation rates as low as 66% in the first minutes of life may make neonates difficult to assess.<sup>3,6</sup>

**60% SpO<sub>2</sub> ±3% accuracy<sup>7</sup>**

Nellcor™ pulse oximetry has demonstrated best-in-class accuracy at saturation rates as low as 60%.<sup>7</sup>



## 5 Skin sensitivity

Monitoring may be unavoidable, even though attaching a sensor may pose a risk to the fragile skin of a newborn.<sup>8</sup>

**No adhesives**

Nellcor™ non-adhesive sensors use the patients' own skin moisture to secure sensor, while comparable in accuracy to adhesive sensors.<sup>9</sup>



## 6 Nuisance alarms

Alarm fatigue can negatively impact your workflow and your ability to provide the best possible care.

**Up to 40% alarm reduction<sup>10,11</sup>**

Nellcor™ SatSeconds alarm management may reduce alarms in neonates by 40 percent.<sup>10,11</sup>



<sup>1</sup> Oxygen saturation accuracy can be affected by certain environmental, equipment, and patient physiologic conditions (as discussed in the operator's manual for the monitor) that influence readings of SpO<sub>2</sub>. Please consult the IFU and manual for full safety information.

<sup>2</sup> Range Applicability: Ranges apply to Nellcor™ pulse oximetry OXIMAX, MAX-A, MAX-AL, MAX-N, MAX-I, MAX-P sensors; see sensor IFUs for complete information.

<sup>3</sup> Wyckoff MH, Aziz K, Escobedo MB, et al. Part 13: neonatal resuscitation: 2015 American Heart Association guidelines update for cardiopulmonary resuscitation and emergency cardiovascular care. *Circulation*. 2015;132(suppl 2):S543-S560.

<sup>4</sup> Khoury R, Klinger G, Shir Y, Osovsky M, Bromiker R. Monitoring oxygen saturation and heart rate during neonatal transition: comparison between two different pulse oximeters and electrocardiography. *J Perinatol*. 2020 Nov 30. doi: 10.1038/s41372-020-00881-y. Epub ahead of print. PMID: 33250516.

<sup>5</sup> Rabi Y, Dawson JA. Oxygen therapy and oximetry in the delivery room. *Semin Fetal Neonatal Med*. 2013;18(6):330-5. doi: 10.1016/j.siny.2013.08.007.

<sup>6</sup> Louie A, Feiner JR, Bickler PE, Rhodes L, Bernstein M, Lucero J. Four types of pulse oximeters accurately detect hypoxia during low perfusion and motion. *Anesthesiology*. 2018;128(3):520-530. doi: 10.1097/ALN.0000000000002002.

<sup>7</sup> Source (RE10052121 - PRD / TRACE MATRIX, OXIMAX SENSORS) - Motion Studies: 10035078, 10047614, 10011350 Clinical motion performance was evaluated for the Max A and rationalized to be equivalent to the Max N. -Max N: Clinical functionality of the MAXN sensor has been demonstrated on a population of hospitalized neonate patients. Source (10018923, Clinical Evaluation Report).

<sup>8</sup> Dawson JA, Kamlin CO, Vento M, et al. Defining the reference range for oxygen saturation for infants after birth. *Pediatrics*. 2010;125(6):e1340-e1347. doi: 10.1542/peds.2009-1510.

<sup>9</sup> Nellcor Oxygen Saturation Accuracy Specification Grid. Part No. 10091796 Rev B 01/2013.

<sup>10</sup> Widiati E, Nurhaeni N, Gayatri D. Medical-device related pressure injuries to children in the Intensive Care Unit. *Compr Child Adolesc Nurs*. 2017;40(sup1):69-77. doi: 10.1080/24694193.2017.1386973.

<sup>11</sup> 10077105 -SoftCare Sensor Peer Review includes verification that the patient contact surface is specified in 901813 REV A. A BOM report from Agile is included for each sensor face to coordinate between the face assembly drawing and the patient contact material.

10077105 -SoftCare Sensor Peer Review includes verification that the sensor is secured to the patient using an integral Velcro closure, a Velcro cable wrap is included for anchoring the cable, and that the sensor does include additional adhesives or sticky rings to extend the use of the sensor. The peer review references the following IFU process instructions (see attachments to RE10077105 for details): IFU: 10035575 rev C (SC-A/SC-A-I), 10056240 rev B (SC-NEO/SC-NEO-I), 10035647 rev B (SC-PR/SC-PR-I) - for attachment method PI065868 rev L: Process Instruction, SoftCare Sensor - verification of package content specification. Product samples: SC-A: lot # 0123072, SC-NEO: lot #8144035, and SC-PR: lot #8032039 - verification of package content

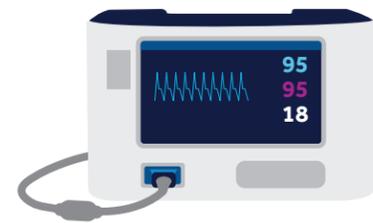
<sup>12</sup> Brostowicz HM. Oxygen Saturation in the Neonatal Intensive Care Unit: Evaluation of a New Alarm Management. American Academy of Pediatrics National Conference and Exhibition. October 2009.

<sup>13</sup> Stefanescu BM et al. Improving Filtering of Pulse Oximeter Monitoring Alarms in the Neonatal ICU: Bedside Significance. *Resp Care*. 2016;61(1):85-89.

# 2 LEADING PULSE OXIMETERS. SEVERAL SIGNIFICANT DIFFERENCES.

A recent study published in the *Journal of Perinatology* compared the efficacy and reliability of **Nellcor™ Oximax Bedside** and **Masimo Radical-7™\* Pulse CO-Oximeter** to evaluate the feasibility of routine ECG monitoring during delivery room transition. Data collected from 55 patients shows statistically significant differences in the two pulse oximetry technologies in neonatal care.

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**NELLCOR VS**  
Nellcor™ Oximax Pulse Oximetry

**MASIMO**  
Masimo Radical-7™\* Pulse CO-Oximeter



<b>100%</b>	<b>Stable signal obtained</b> (% of patients)	<b>92%</b>
<b>15 sec</b>	<b>Average time to stable signal</b> (in seconds)	<b>27 sec</b>
<b>STRONGLY correlated</b> <b>r=0.894</b>	<b>Heart rate compared to ECG</b> (correlation coefficient)	<b>r=0.235</b> <b>WEAKLY correlated</b>
<b>0%</b>	<b>Mismatch ≥ 40 bpm compared to ECG</b> (% of patients)	<b>31%</b>
<b>0%</b>	<b>False bradycardia</b> (% of patients)	<b>35%</b>

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STUDY: Khoury R, Klinger G, Shir Y, Osovsky M, Bromiker R. Monitoring oxygen saturation and heart rate during neonatal transition. comparison between two different pulse oximeters and electrocardiography. *J Perinatol.* 2020 Nov 30. doi: 10.1038/s41372-020-00881-y. Epub ahead of print. PMID: 33250516.  
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