

ORi™: a new indicator of oxygenation

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In the perioperative period, hypoxemia and hyperoxia are crucial factors that require attention, because they greatly affect patient prognoses. The pulse oximeter has been the only noninvasive monitor that can be used as a reference of oxygenation in current anesthetic management; however, in recent years, a new monitoring method that uses the oxygen reserve index (ORi™) has been developed by Masimo Corp. ORi is an index that reflects the state of moderate hyperoxia (partial pressure of arterial oxygen [PaO₂] between 100 and 200 mmHg) using a non-unit scale between 0.00 and 1.00. ORi monitoring performed together with percutaneous oxygen saturation (SpO₂) measurements may become an important technique in the field of anesthetic management, for measuring oxygenation reserve capacity. By measuring ORi, it is possible to predict hypoxemia and to detect hyperoxia at an early stage. In this review, we summarize the method of ORi, cautions for its use, and suitable cases for its use. In the near future, the monitoring of oxygen concentrations using ORi may become increasingly common for the management of respiratory function before, after, and during surgery.