Nonin Medical EQUANOX™ Model 7600
Regional Oximetry Backgrounder

Nonin Medical’s EQUANOX Model 7600 regional oximetry system is a noninvasive monitoring device that provides real-time management of patients at risk for brain damage or other major organ injury during surgery and in critical care environments. The device continuously monitors changes in site-specific oxygen levels of blood (known as an rSO2 measurement) in the brain or body tissues beneath the sensor. This allows clinicians to react quickly to reverse tissue ischemia events in adults, children, infants and neonates before they become critical.

Anesthesiologists, cardiovascular surgeons, perfusionists, pediatric surgeons, neonatologists and other clinicians use the EQUANOX 7600 regional oximetry system to spot-check or continuously monitor patients in operating room, surgical recovery, critical care, and emergency room environments.

About 500,000 cardiovascular surgical procedures are performed annually in the U.S. Regional oximetry-monitored procedures typically allow for early indication of oxygen desaturation that could lead to stroke, neurocognitive decline and other neurological or major organ injuries resulting from inadequate oxygen saturation. Regional oximetry solutions have been shown to reduce the cost of post-operative care and improve patient outcomes.

A Leader in NIRS-based Technology

Nonin Medical invented Near-Infrared Spectroscopy (NIRS)-based fingertip pulse oximetry (SpO2) with the Onyx® Model 9500, so the move to produce an accurate, durable, portable NIRS-based regional oximeter was a natural one. Today, Nonin’s clinically proven EQUANOX rSO2 and PureSAT® SpO2 technologies—known for their stability, signal processing speed, and ability to uniquely filter out artifact interference—provide confidence to millions of clinicians that the numerical values they see reflect their patients’ true physiology.

Significant Nonin Medical pulse and regional oximetry advancements include:

- **1990** — Introduced world’s first portable hand-held pulse oximeter
- **1995** — Introduced world’s first fingertip pulse oximeter
- **2004** — Introduced world’s first pulse oximeter with Bluetooth® wireless technology
- **2009** — Introduced the EQUANOX™ regional oximetry system, the first and only device that utilizes a dual-light emitting and detecting sensor architecture, which has been shown to more effectively target the cerebral cortex
Advantages of the EQUANOX Advance Model 7600 Oximetry System include:

- **Cerebral and Somatic Monitoring** – Up to four channels displayed on one screen for monitoring oxygen saturation in the brain and somatic sites on the body
- **Patented Dual-Light Emitters and Dual Detectors with Four Wavelength Accuracy** – The first and only device that utilizes a dual-light emitting and detecting sensor architecture, which has been shown to more effectively target the cerebral cortex, eliminating surface artifacts that interfere with measurement accuracy²
- **Absolute Accuracy** – Assures accurate measure of tissue saturation at a point in time, not just relative or trending accuracy of changes**
- **Consistency and Reliability** – Rapid, reliable response to change without signal instability and interruptions from ambient electrical and light interference
- **Portability and Connectivity** – Lightweight, durable monitor with long battery life and pole-mounting capability for continually monitoring patients during intra-hospital transport. Data output available via Bluetooth® wireless technology or RS232 connection. Interfaces with Philips® VueLink to provide connectivity to a variety of Philips multi-parameter monitors, Philips CompuRecord Anesthesia Information System, Spectrum Medical VIPER Independent Data Management System and Sorin Perfusion Data Management System. Also interfaces with CAPSULE gateways to allow connectivity to a variety of electronic medical record systems, including EPIC.
- **A Single-Sensor Option Designed Specifically for Neonatal and Pediatric Patients** – Nonin’s EQUANOX Advance 8004CB sensor features adhesive and non-adhesive versions for delicate skin, a small footprint for space-saving placement and short light-path spacing for pediatric-appropriate tissue-depth readings. The sensor also features Nonin’s Dynamic Compensation™ algorithm for calculating accurate, patient-specific values in a single-sensor solution for all patients less than 40 kg. (Unlike older competitive systems, the Nonin EQUANOX system doesn’t require the physician to input patient demographics or stock and choose from multiple sensors to compensate for variation in pediatric patient brain development; it simplifies protocols and inventory requirements, saving time and money.)

**Proven Clinical Efficacy**

The recent publication of two separate studies demonstrated the clinical efficacy of Nonin Medical’s EQUANOX™ Model 7600 Cerebral and Somatic Oximetry System in adult and pediatric patients. The studies, published in the Annals of Thoracic Surgery (November 2012) and the Journal of Cardiothoracic and Vascular Anesthesia (December 2012), demonstrated the clinical effectiveness of Nonin’s EQUANOX sensors in measuring critical oxygen saturation levels in the brain.³⁴ The studies
are the first published results to demonstrate the absolute accuracy of a near-infrared spectroscopy (NIRS) cerebral oximeter system in a wide range of patients. Nonin Medical sponsored the studies.

For more clinical and product information about Nonin Medical’s EQUANOX regional oximetry systems, visit noninequanox.com.

About Nonin Medical, leaders in noninvasive medical monitoring

Nonin Medical, Inc. invented finger pulse oximetry and designs and manufactures innovative noninvasive medical monitoring solutions that meet customers’ technology needs today and tomorrow. Headquartered in Minneapolis, Minn., with a customer center in Amsterdam, the Netherlands, Nonin sells its pulse and regional oximeters, capnographs, sensors and software to health professionals and consumers in more than 125 countries. The company also has more than 100 OEM partners worldwide. For more information, visit nonin.com.

*Based on 8004CA clinical results.
**EQUANOX Advance Model 8004CA, 8004CB and 8004CB-NA sensors only

References:


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