

# Clinical Studies comparing leading Pulse Oximetry Technologies find Masimo SET has best performance

## *Masimo SET outperforms other technologies in three studies investigating the reliability of pulse oximetry under challenging conditions*

*New Orleans, LA, October 15, 2001.* Three studies validating Masimo SET as the performance leader in pulse oximetry were presented during a special lecture series on technology, monitoring and equipment at the Annual Meeting of the American Society of Anesthesiologists (ASA) in New Orleans. Two of the studies compared Masimo SET against conventional pulse oximeters under a variety of challenging conditions including motion, low perfusion and hypothermic cardiopulmonary bypass (CPB). A third study investigated recovery times for the accurate display of SpO<sub>2</sub> and pulse rate after motion induced failure of pulse oximeters. In all cases, Masimo SET dramatically outperformed all other conventional pulse oximeters in a clinically significant manner.

A team of researchers led by Nitin Shah, MD, from the Department of Anesthesiology, University of California at Irvine, presented results from a new study comparing the performance of five pulse oximeters that claim to be motion and low perfusion tolerant on both oxygen saturation (SpO<sub>2</sub>) and pulse rate. The study concludes that Masimo SET® performed the best of all the models tested in terms of accuracy and reliability during patient motion and low perfusion conditions. Dr Shah's group also presented a second study investigating the recovery time for the accurate display of SpO<sub>2</sub> and pulse rate after motion induced failure of pulse oximeters during conditions of low perfusion. Five pulse oximeters were tested for performance, and the study's authors again concluded that Masimo SET outperformed all other models for both recovery time and failure rates.

In both studies conducted at UC, Irvine, the Masimo SET Radical was compared with four "next generation" pulse oximeters, including the Nellcor N-395. Patient motion was performed by a repeatable and scientific protocol, and introduced during normoxia (breathing room air). The authors concluded their analysis demonstrated a statistically significant difference between the performance of the pulse oximeters for both SpO<sub>2</sub> and pulse rate, and Masimo SET outperformed all systems tested. In the second study, Masimo SET demonstrated a faster mean recovery time for the accurate display of SpO<sub>2</sub> and pulse rate versus all oximeters tested, including a 46% faster recovery time versus the Nellcor N395.

In another study, a group of researchers led by Kazuo Irita, MD, Department of Anesthesiology and Critical Care Medicine, Kyushu University School of Medicine, Fukuoka, Japan, presented a new study comparing the performance of the Masimo SET Radical pulse oximeter and a conventional pulse oximeter during hypothermic cardiopulmonary bypass (CPB). Eighteen patients were studied and the Masimo SET pulse oximeter displayed accurate SpO<sub>2</sub> values when the conventional pulse oximeter couldn't during mild hypothermic CPB, indicating that Masimo SET is more useful for monitoring SpO<sub>2</sub> during low perfusion. The authors used the roller pump generated CPB device, which had pulsatility sufficient enough to enable the Masimo SET pulse oximeter to display SpO<sub>2</sub> even at extremely low mean arterial blood pressure (MABP).

Kevin Mosher, Marketing Executive of Masimo, commented; "Historically, pulse oximeter measurements have been prone to errors when patients move or are poorly perfused. Masimo innovated Signal Extraction Technology, which allowed for the first time pulse oximeters to be reliable even during motion and low perfusion. Many companies, including Atom, Datascope, GE Medical Systems, and Zoll, have licensed Masimo SET, and are delivering this truly breakthrough technology to their customers. Growing body of clinical evidence, clearly demonstrate that no other company or technology can deliver the superior performance of Masimo SET pulse oximetry, which has been linked to reduced medical errors, improved outcome and reduction in cost of care."

*For further information on Masimo technology in the UK, contact Artemis Medical on 01322 628877 or go to [www.artemismedical.co.uk](http://www.artemismedical.co.uk)*