

**Clinical Usefulness of New-Generation Pulse Oximetry in the Paediatric Cardiac Surgery Setting**  
Cannesson M., Hénaine R., Di Filippo S., Neidecker J., Bompard D., Védrette C., Lehot J.J. *Ann Fr Anesth Reanim.* 2008 Oct;27(10):808-12. [Article in French]

**Objectives**

Arterial oxygen saturation (SaO<sub>2</sub>) monitoring using pulse oximeter (SpO<sub>2</sub>) is mandatory in the intensive care unit. The aim was to assess bias and precision of new (SpO<sub>2</sub>ng) and old (SpO<sub>2</sub>og) pulse oximeter technologies in the postoperative period following pediatric cardiac surgery in cyanotic children.

**Study Design**

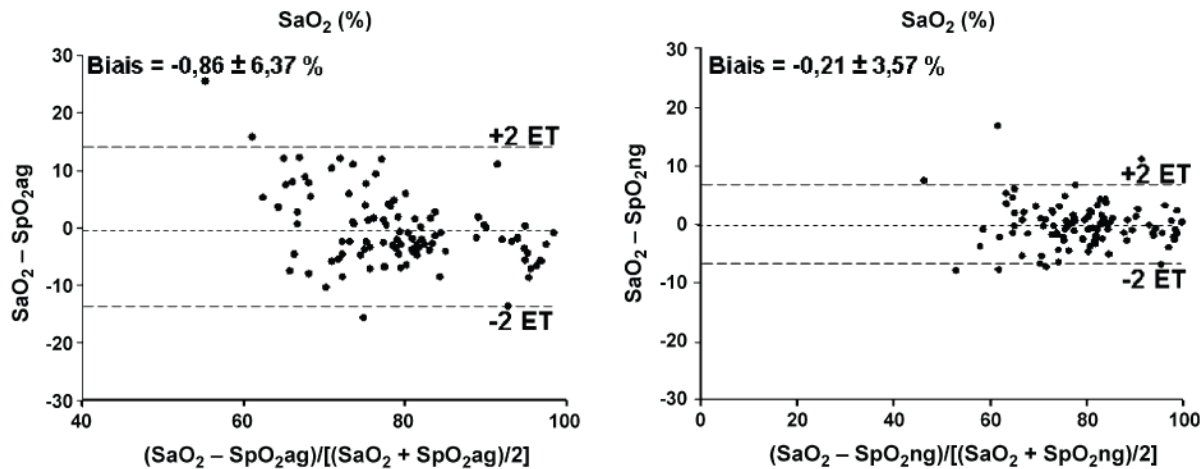
Prospective, monocentric.

**Patients and Methods**

Ten patients (7 days to 53 months old) were studied in the postoperative period following palliative cardiac surgery. SaO<sub>2</sub>, SpO<sub>2</sub>og, and SpO<sub>2</sub>ng were obtained every 4 hours. SaO<sub>2</sub> of arterial blood sample was obtained from an intra-arterial catheter located in the radial artery, on the same side as the oximeters. Bias and precision were assessed using Bland-Altman analysis.

**Results**

We obtained 136 SaO<sub>2</sub> determinations. Mean SaO<sub>2</sub> was 76±15%. SpO<sub>2</sub>og was significantly different from SaO<sub>2</sub>, while SpO<sub>2</sub>ng was not different from SaO<sub>2</sub>. In 21 (15%) cases, SpO<sub>2</sub>og was not available whereas SpO<sub>2</sub>ng was available in 136 (100%) cases. In the remaining 115 cases, SpO<sub>2</sub>ng's precision was significantly better than SpO<sub>2</sub>og's precision.



**Discussion**

SpO<sub>2</sub>ng is more accurate and more reliable than SpO<sub>2</sub>og for SaO<sub>2</sub> monitoring in the postoperative period following pediatric cardiac surgery in cyanotic children.