

**Prolonged, Documented Home-Monitoring of Oxygenation in Infants and Children.**  
Gélinas J.F., Davis G.M., Arlegui C., Côté A. *Pediatr Pulmonol.* 2008 Mar;43(3):288-96.

**Introduction**

Although home cardiorespiratory monitors have been used for a few decades, they do not give information on oxygenation status during events. Pulse oximeters with low false-alarm rates are now available but with no standards for alarm adjustment.

**Objective**

To determine, in a population of children monitored at home with a pulse oximeter, whether the chosen alarm levels could safely identify potentially significant events early on but also limit the number of alarms for non-significant events.

**Methods**

Retrospective cohort study of all children monitored at home with a pulse oximeter (n = 37) between 2002 and 2007. Clinical information and Hb-O<sub>2</sub> saturation (SpO<sub>2</sub>) recordings were reviewed. Audible alarm was set-up when SpO<sub>2</sub> reached 85% with a delay of 5 or 10 sec.

**Results**

A total of 24,127 hr of valid data were available for analysis. There were 13,228 events >4 sec of which 9177 (69%) were events lasting <10 sec. We determine that, with an audible alarm being triggered when SpO<sub>2</sub> reached 85% with no delay or a delay of 5 or 10 sec, audible alarms would have occurred at a rate of 3.6, 0.9, and 0.2 alarm/night (median), respectively. Thirteen patients needed intervention following alarms. Ten patients were readmitted to the hospital on the basis of increased frequency of alarms confirmed as true events on the recordings, but in the absence of clinical deterioration.

**Conclusions**

The monitor was able to alert parents as to potentially dangerous events while the alarm adjustment limited the number of alarms for non-significant events