

## Intermittent vs Continuous Pulse Oximetry in Hospitalized Infants With Stabilized Bronchiolitis: A Randomized Clinical Trial JAMA Pediatr. 2021;175(5):466-474.

**Background:** There is low level of evidence and substantial practice variation regarding the use of intermittent or continuous monitoring in infants hospitalized with bronchiolitis.

**Objective:** To compare the effect of intermittent vs continuous pulse oximetry on clinical Outcomes.

**Methods:** This multicenter (six centres), pragmatic randomized clinical trial included infants 4 weeks to 24 months of age who were hospitalized with bronchiolitis from November 1, 2016, to May 31, 2019, with or without supplemental oxygen after stabilization at community and children's hospitals in Ontario, Canada. Infants with bronchiolitis were admitted.

Specifically, hospitalized infants who required supplemental oxygen had to be stable for at least 6 hours from presentation to the emergency department were included. Infants who required intensive care unit (ICU) admission for mechanical or non-invasive ventilatory support were excluded. After enrolment, 1:1 randomization was done into intermittent or continuous oxygen saturation monitoring. Continuous monitoring was done in one group until stabilization keeping oxygen target of >90% and intermittent monitoring was done in other group every 4 hourly.

## ACADEMIC P.E.A.R.L.S

Pediatric Evidence And Research Learning Snippet



### Intermittent vs Continuous Pulse Oximetry in ward Infants With Bronchiolitis : Which one is better then?

**Results:** Among 229 infants no significant differences were observed between the intermittent and continuous groups in the median length of stay from inpatient unit admission to discharge: 49.1 hours vs 46.0 hours ( $P = 0.13$ ) or in Frequencies of oxygen supplementation initiation: 3.5% vs 7.8% ( $P = 0.16$ ) and median duration of oxygen supplementation: 20.6 hours vs. 21.4 hours ( $P = 0.66$ ). Similarly, there were no significant differences in frequencies of intensive care unit transfer, readmission to hospital, parent anxiety, parent work days missed. Nursing satisfaction with monitoring was significantly greater in the intermittent group.

**Conclusions:** Findings from the trial support the standard use of intermittent pulse oximetry in stable infants hospitalized with bronchiolitis with advantage of better nursing satisfaction.

**Key message:** Less intense monitoring could be considered in pre defined subgroup of infants with bronchiolitis.

**Similar evidence:** Intermittent pulse oximetry monitoring of nonhypoxemic patients with bronchiolitis did not shorten hospital length of stay and was not associated with any difference in rate of escalation of care or use of diagnostic or therapeutic measures. Shortcomings of this trial included: exclusion of infants with hypoxemia, unreported initiation of intermittent oximetry, outcomes related to parents, nurse, and post discharge outcomes were not reported.

### EXPERT COMMENT

**"Careful monitoring of clinical status which includes pulse oximetry is key in management and care of children hospitalised with bronchiolitis. Bronchiolitis is a self-limiting viral infection but may progress to respiratory failure. The sick children need to be identified and managed accordingly. This study shows that intermittent pulse oximetry was similar to the usual continuous pulse-oximetry in terms of length of inpatient stay. Similar practice may be implemented in clinical practice with disclaimer that the other parameters of respiratory failure are also diligently being observed."**

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With warm regards,

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### Reference

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McCulloh R, Koster M, Ralston S, Johnson M, Hill V, Koehn K, Weddle G et al. Use of Intermittent vs Continuous Pulse Oximetry for Nonhypoxemic Infants and Young Children Hospitalized for Bronchiolitis: A Randomized Clinical Trial. JAMA Pediatr. 2015 Oct;169(10):898-904.