

Temperature Monitoring Devices in Neonates

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INTRODUCTION: Accurate temperature monitoring of neonates is vital due to the significant morbidities and mortality associated with neonatal hypothermia. Many studies have compared different thermometers in neonates, however, there is a lack of consensus regarding which of the currently available thermometers is most suitable for use in neonates.

OBJECTIVES: The aim of this review was to identify and compare current methods available for temperature monitoring of neonates beyond the delivery room, including the accuracy, advantages and disadvantages of each.

METHODS: A recent search and narrative synthesis of relevant studies published between January 1, 1949 and May 5, 2021 on the OVID Medline, PubMed and Google Scholar databases.

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

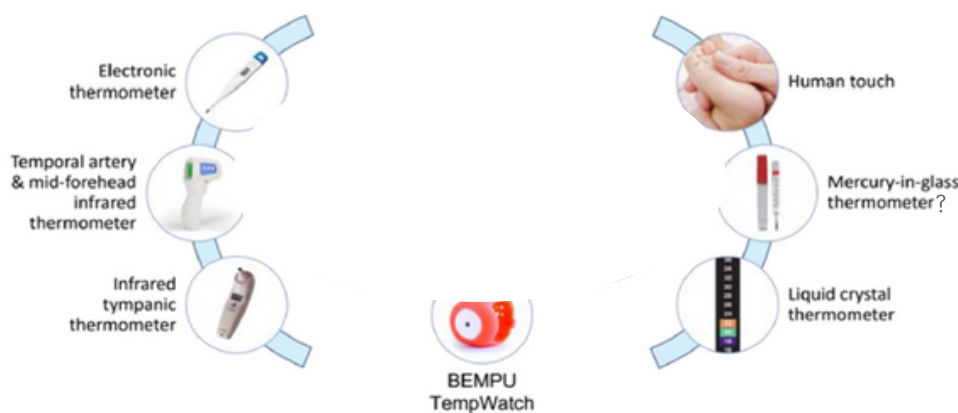
Pediatric Evidence And Research Learning Snippet



Temperature measurement devices in neonates

RESULTS:

- A total of 160 papers were retrieved for narrative synthesis.
- The main methods available for temperature monitoring in neonates are human touch and mercury-in-glass, electronic, infrared tympanic and other infrared thermometers.
- Newer innovations that are also available include liquid crystal thermometers and the BEMPU Temp Watch.
- This paper discusses the current evidence available regarding the utility of these devices, and identifies barriers to valid comparison of different thermometry methods based on duration to *transient* (48 hr or less) or *persistent* (more than 48 hr).



Conclusions:

- Many methods for temperature monitoring in neonates are currently available, each with their own advantages and disadvantages.
- However, the accuracies of different devices are hard to determine due to variable methodologies used in relevant studies and hence, further research that addresses these gaps is needed.

EXPERT COMMENT

“Neonatal hypothermia is a global problem that causes significant morbidity and mortality esp. in developing countries. There is lack of consensus regarding a gold standard method of temperature measurement. The ideal method of temperature measurement should be simple, rapid, non-invasive, accurate and cost-effective. Newer innovations (ThermoSpot, BEMPU Temp Watch) should be tried and validated further.”

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With warm regards,

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Reference

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