INTRODUCTION/PROBLEM STATEMENT

Temperature measurement in ill infants and children is a vital assessment parameter. Generally, the measurement of body temperature is used to determine the presence or absence of fever. Fever can be used to gauge the severity of illness by both parents and healthcare providers. However, many factors such as age, activity level, time of day, disease/illness, ambient temperature, and clothing can influence body temperature.

DEFINITION(S)

A normal temperature is not a specific number but instead can range from 97 to 100.4 degrees Fahrenheit. According to the American Academy of Pediatrics (AAP) many fevers do not need treatment and are simply an indicator that the immune system has been activated as the result of a bacterial or viral illness. Fevers can actually help shorten a child’s illness (AAP, 2006). The need for immediate assessment, septic workup, and treatment for infants less than 90 days old with fever must be recognized as the infant’s condition can deteriorate quickly (Graneto, 2016).

One widely-accepted and expert resource for parents and nurses on pediatric fever is the American Academy of Pediatrics website (www.aap.org), which offers public access to information and policy statements on common pediatric problems, including fever. When searching for the term “fever” in the HealthyChildren.org section of the AAP website (AAP, n.d.), one can find what could be considered an expert definition of pediatric fever, signs and symptoms associated with fever, an overview of details regarding when and how to assess pediatric temperature using oral, rectal, tympanic, and axillary methods, as well as medications used to manage fever.

RATIONALE AND SUPPORTING INFORMATION

The most accurate and appropriate method of measuring fever in children has been a topic of concern for many years. The use of the mercury thermometer has been phased out because of potential health problems associated with mercury. In addition to oral, rectal, and axillary methods, there are newer modes of measuring temperature such as tympanic and temporal artery methods, and the addition of these has increased the confusion. It is important that the nurse caring for infants and children, regardless of the setting, be aware of best practice implications for measuring temperature, or fever, in pediatric clients. For years, the measurement of temperature via the rectal route was the “gold standard.” This was accomplished using a glass thermometer with mercury. The development of electronic and non-electronic methods that are faster and inexpensive has created much discussion related to the best method for measuring temperature in children. The pediatric nurse (regardless of setting) is commonly approached requesting advice on temperature measurement in children. The nurse must be able to articulate and discuss common safe practices for use in home and healthcare settings.

Over the past decade, the newer and more convenient modes of measurement of temperature have
spawned many studies regarding the most accurate and reliable method for measuring temperature in children. While there have been no conclusive standardized results, the various studies each contribute to a better understanding of temperature measurement in children. Although there are several methods available for measuring temperature, the goal is to use the most accurate method with the least degree of variance while still recognizing the comfort of the patient and ease of use for the healthcare provider. Because of a greater degree of variance accuracy, the temporal artery method should not be used with infants 90 days or younger who are ill, have a fever, or an ill diagnosis. The rectal method should be used for these infants unless contraindicated by diagnosis (e.g., Gl/rectal bleeding, prematurity, oncology diagnosis). When the use of a rectal temperature method is contraindicated by diagnosis, the axillary method should be used. The temporal artery method can reliably be used in infants less than 90 days old without fever as well as for all patients greater than 3 months of age with or without fever, ill or well. In children 6 months of age or older, the tympanic or temporal artery methods may be used with correct positioning of the ear (tympanic) (Leduc & Woods, 2000).

Some of the studies that have been conducted include fever measurement in various settings (Jean-Mary, Dicanzio, Shaw, & Bernstein, 2002; Martin & Kline, 2004; Maxton, Justin, & Gillies, 2004). Other studies approached fever management using various modes/methods (Barton, Gaffney, Chase, Rayens, & Piyabanditkul, 2003; Devrim et al., 2007; El-Radhi & Barry, 2006; Lefrant et al., 2003; Molton, Blacktop, & Hall, 2001; Schuh, Komar, Stephens, Chu, Read, & Allen, 2004). Still other researchers approached the issue in terms of various ages of the children (Greenes & Fleisher, 2001; Leick-Rude & Bloom, 1998; Siberry, Diener-West, Schappell, & Karron, 2002). Limited studies have been conducted to analyze other studies (Craig, Lancaster, Taylor, Williamson, & Smyth, 2002; Houlder, 2000).

**POSITION and/or RECOMMENDATIONS**

The mission of the Society of Pediatric Nurses is to advance the specialty of pediatric nursing through excellence in education, research and practice. To address the issue of the measurement of temperature/fever in children, SPN recommends the following best practice implications for measuring temperature, or fever, in pediatric clients:

1. The nurse is aware that temperature measurement is a common concern for healthcare providers and parents and is knowledgeable as to the various modes/methods available for measuring temperature in children.
2. Documentation accurately reflects mode/method of temperature measurement.
3. Temporal artery thermometry is accurate with infants younger than 90 days without fever as well as for all patients greater than 3 months of age with or without fever, ill or well.
4. The rectal method should be used for infants younger than 90 days unless contraindicated by diagnosis.
5. The tympanic or oral methods may be used in children 6 months of age or older, with correct positioning of the ear (tympanic) and if the patient can cooperate (oral).
6. The patient assessment includes etiologies that influence temperature/fever in children.
7. Evidence-based practice determines the best method for evaluating temperature/fever in any given setting, based on the age and condition of the client.
8. Evidence-based practice is utilized to determine best practice in policy development.

**REFERENCES**


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