

# Fever

Setting: **Inpatient**      Population: **Pediatric**

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## Clinical Description

Care of the hospitalized child experiencing elevated body temperature.

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## Key Information

- Core temperature monitoring (intravascular, esophageal, bladder) is most accurate. If noncore monitoring is used, only oral and rectal electronic measurement should be used to support clinical decision-making, based on current evidence.
  - Fever has a protective role with infection, however, it has been proven harmful in the presence of septic shock or cerebral damage. It may be harmful for children with heart failure, respiratory comorbidity, hemodynamic instability or neuropsychiatric disorder.
  - Recommendations vary regarding temperature value at which antipyretic pharmacologic therapy or active cooling method should be initiated. Management should be individualized by baseline temperature and symptoms.
  - Febrile seizures are felt to be caused by genetic susceptibility. Use of antipyretic medication does not prevent seizures.
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## Clinical Goals

By transition of care

A. The patient will demonstrate achievement of the following goals:

- Body Temperature in Desired Range

B. Patient, family or significant other will teach back or demonstrate education topics and points:

- Education: Overview
- Education: Self Management
- Education: When to Seek Medical Attention

## Correlate Health Status

Correlate health status to:

- history, comorbidity, congenital anomaly
  - age, developmental level
  - sex, gender identity
  - baseline assessment data
  - physiologic status
  - response to medication and interventions
  - psychosocial status, social determinants of health
  - barriers to accessing care and services
  - child and family/caregiver:
    - health literacy
    - cultural and spiritual preferences
  - safety risks
  - family interaction
  - plan for transition of care
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## Fever

### Signs/Symptoms/Presentation

- agitation
- diaphoresis
- irritability
- lethargic
- level of consciousness decreased
- seizure activity
- skin flushed
- skin warm to touch

## Vital Signs

- blood pressure increased or decreased
- core body temperature elevated
- heart rate increased
- respiratory rate increased

## Laboratory Results

- blood culture positive
- WBC (white blood cell) count elevated

## Hemodynamic Values

- CVP (central venous pressure) decreased
- MAP (mean arterial pressure) change

## Problem Intervention(s)

### **Promote Normothermia**

- Identify and address underlying cause.
- Monitor body temperature and trend; manage variability.
- Provide optimal hydration; consider increased need due to insensible loss.
- Administer antipyretic medication to reduce temperature and discomfort.
- Encourage sleep/rest to minimize oxygen and metabolic demand.
- Provide oxygen therapy if hypoxemia is present.
- Provide comfort measures; adjust environment to minimize body temperature (e.g., offer cool cloths, encourage lightweight clothing and covers, reduce room temperature, increase air circulation, decrease stimulation).
- Consider active cooling measures (e.g., external-cooling device, tepid sponge or tub bath, internal-cooling method); cool gradually to avoid shivering.

### **Associated Documentation**

- Thermoregulation Maintenance

## General Education

- admission, transition of care
  - orientation to care setting, routine
  - advance care planning
  - diagnostic tests/procedures
  - opioid medication management
  - oral health
  - medication management
  - pain assessment process
  - safe medication disposal
  - tobacco use, smoke exposure
  - treatment plan
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## Safety Education

- call light use
  - equipment/home supplies
  - fall prevention
  - harm prevention
  - infection prevention
  - MDRO (multidrug-resistant organism) care
  - personal health information
  - resources for support
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## Education: Overview

- description
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## Education: Self Management

- fever reduction measures
  - fluid intake
  - provider follow-up
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## Education: When to Seek Medical Attention

- unresolved/worsening symptoms
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## References

- Aluka, T. M.; Gyuse, A. N.; Udonwa, N. E.; Asibong, U. E.; Meremikwu, M. M.; Oyo-Ita, A. Comparison of cold water sponging and acetaminophen in control of fever among children attending a tertiary hospital in south Nigeria. *Journal of Family Medicine and Primary Care*. 2013;2(2), 153-158. doi:10.4103/2249-4863.117409 [Review Articles, Expert/Committee Opinion, Core Curriculum, Position Statements, Practice Bulletins]
- Chiappini, E.; Venturini, E.; Remaschi, G.; Principi, N.; Longhi, R.; Tovo, P.; Becherucci, P.; Bonsignori, F.; Esposito, S.; Festini, F.; Galli, L.; Lucchesi, B.; Mugelli, A.; Marseglia, G. L.; de Martino, M. 2016 update of the Italian pediatric society guidelines for management of fever in children. *Journal of Pediatrics*. 2017;180, 177-183.e1. doi: 10.1016/j.jpeds.2016.09.043 [Quality Measures, Clinical Practice Guidelines]
- Geijer, H.; Udumyan, R.; Lohse, G.; Nilsagrd, Y. Temperature measurements with a temporal scanner: Systematic review and meta-analysis. *BMJ Open*. 2016;6(3) doi:10.1136/bmjopen-2015-009509 [Metasynthesis, Meta-analysis, Systematic Review]
- Goldstein, L. H.; Berlin, M.; Berkovitch, M.; Kozer, E. Effectiveness of oral vs rectal acetaminophen: A meta-analysis. *Archives of Pediatrics and Adolescent Medicine*. 2008;162(11), 1042-1046. doi:10.1001/archpedi.162.11.1042 [Metasynthesis, Meta-analysis, Systematic Review]
- Hammond, B. B.; Zimmermann, P. G. (2013). *Sheehy's manual of emergency care*. St. Louis: Mosby, Elsevier. [Review Articles, Expert/Committee Opinion, Core Curriculum, Position Statements, Practice Bulletins]
- Hockenberry, M. J.; Wilson, D. (2015). *Wong's nursing care of infants and children*. St. Louis: Mosby, Elsevier. [Review Articles, Expert/Committee Opinion, Core Curriculum, Position Statements, Practice Bulletins]
- Hu, F.; Zhang, J.; Shi, S.; Zhou, Z. Fever management in the emergency department of the children's hospital of Fudan university: A best practice implementation project. *JBIS Database of Systematic Reviews and Implementation Reports*. 2016;14(9), 358-366. doi:10.11124/JBISRIR-2016-003072
- Narayan, K.; Cooper, S.; Morphet, J.; Innes, K.. Effectiveness of paracetamol versus ibuprofen administration in febrile children: A systematic literature review. *Journal of Paediatrics and Child Health*. 2017;53(8), 800-807. [Metasynthesis, Meta-analysis, Systematic Review]

National Collaborating Centre for Women's and Children's Health (UK). (2013). *Feverish illness in children: Assessment and initial management in children younger than 5 years*. Source [Quality Measures, Clinical Practice Guidelines]

Niehues, T. The febrile child: Diagnosis and treatment. *Deutsches Ärzteblatt International*. 2013;110(45), 764-774. doi:10.3238/arztebl.2013.0764 [Review Articles, Expert/Committee Opinion, Core Curriculum, Position Statements, Practice Bulletins]

Offringa, M.; Newton, R. Prophylactic drug management for febrile seizures in children. *Cochrane Database of Systematic Reviews*. 2012;(4) doi:10.1002/14651858.CD003031.pub2 [Metasynthesis, Meta-analysis, Systematic Review]

Opiyo, N.; Molyneux, E.; Sinclair, D.; Garner, P.; English, M. Immediate fluid management of children with severe febrile illness and signs of impaired circulation in low-income settings: A contextualised systematic review. *BMJ Open*. 2014;4(4) doi:10.1136/bmjopen-2014-004934 [Metasynthesis, Meta-analysis, Systematic Review]

Ryan-Wenger, N. A.; Sims, M. A.; Patton, R. A.; Williamson, J.. Selection of the most accurate thermometer devices for clinical practice: Part 1: Meta-analysis of the accuracy of non-core thermometer devices compared to core body temperature. *Pediatric Nursing*. 2018;44(3), 116-133. [Metasynthesis, Meta-analysis, Systematic Review]

Wong, T.; Stang, A. S.; Ganshorn, H.; Hartling, L.; Maconochie, I. K.; Thomsen, A. M.; Johnson, D. W. Combined and alternating paracetamol and ibuprofen therapy for febrile children. *Cochrane Database of Systematic Reviews*. 2013;(10) doi:10.1002/14651858.CD009572.pub2 [Metasynthesis, Meta-analysis, Systematic Review]

Zhen, C.; Xia, Z.; Long, L.; Pu, Y. Accuracy of infrared ear thermometry in children: A meta-analysis and systematic review. *Clinical Pediatrics*. 2014;53(12), 1158-1165. doi:10.1177/0009922814536774 [Metasynthesis, Meta-analysis, Systematic Review]