

Fever in Well-Appearing Children Younger Than Two Years: A Clinical Policy from the ACEP

Key Points for Practice

- Lumbar puncture can be delayed in well-appearing infants 29 to 90 days of age with fever and suspected virus provided they are followed closely or hospitalized.
- Chest radiography should not be performed in well-appearing children two months to two years of age with fever of at least 100.4°F and wheezing or a high chance of bronchiolitis.
- Urinalysis and urine cultures to diagnose urinary tract infection should be considered in well-appearing children two months to two years of age who have a fever of at least 100.4°F, especially if they are at higher risk.

From the AFP Editors

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In one year, 15% of visits to the emergency department by persons younger than 15 years are children with fever, usually attributed to a benign, self-limited viral infection. Some fevers, however, can be a sign of serious infection, especially in infants younger than three months. Although treating those who appear ill is clear cut, it can be difficult to distinguish between a benign condition and a serious bacterial infection in those who appear well. The American College of Emergency Physicians (ACEP) has released a clinical policy addressing issues in children younger than two years who visit the emergency department with fever, but who appear well.

Recommendations

INFANTS ONE TO THREE MONTHS OF AGE

Laboratory studies, including a lumbar puncture to evaluate for meningitis, are commonly performed in the emergency department when an infant presents with fever. Routinely performing a lumbar puncture, which is invasive and has associated risks, is controversial. On the other hand, initiating antibiotic treatment without performing a lumbar puncture can lead to incomplete treatment or late identification of meningitis. Being able to predict which infants

presenting with fever would benefit from a lumbar puncture could help lessen parent anxiety, as well as decrease costs, the use of invasive testing, exposure to antibiotics, and admissions to the hospital.

Lumbar puncture may be considered in infants 29 to 90 days of age with fever, despite that no predictors sufficiently pinpoint when cerebrospinal fluid should be obtained. Because of the lower risk of meningitis, lumbar puncture can be delayed in full-term infants diagnosed with a viral illness. Unless another source of bacteria is found, antibiotics should be withheld in infants whose lumbar puncture is delayed. These infants should be admitted to the hospital, be closely followed by a family physician, or return to the emergency department for follow-up.

CHILDREN TWO MONTHS TO TWO YEARS OF AGE

The need for chest radiography in children with fever who appear well can be uncertain, especially because these patients have a greater chance of having a benign viral condition with symptoms similar to bacterial pneumonia. Clinicians should balance the benefits of performing chest radiography in children with fever (e.g., making a diagnosis and starting treatment) with the harms (e.g., radiation exposure). Chest radiography should be considered in children with a fever of at least 100.4°F (38°C) with no clear infection source who have a cough, hypoxia, rales, high fever (at least 102.2°F [39°C]), fever lasting longer than two days, or who have tachycardia or tachypnea out of proportion to the fever. Chest radiography should not be performed in those with fever of at least 100.4°F and wheezing or a high chance of bronchiolitis.

Urinalysis and urine cultures to diagnose urinary tract infection should be considered

in children who have a fever of at least 100.4°F, especially if they are at higher risk (i.e., girls younger than one year, uncircumcised boys, those who are not black, fever lasting longer than one day, fever of at least 102.2°F, negative results on respiratory pathogens testing, and no clear infection source). No clinical variable or absent variable has been identified to sufficiently rule out urinary tract infection or the need for testing, although the presence of a viral infection may reduce the risk.

An initial diagnosis of urinary tract infection can be made if there is a positive result on urine leukocyte esterase, nitrite, leukocyte count, or Gram stain testing. A urine culture should be performed before starting antibiotics in these patients, as well as in those with a negative result on

dipstick urinalysis but in whom urinary tract infection is still suspected. Although not addressed in this policy statement, it should be noted that the American Academy of Pediatrics recommends that urine collection be done through catheterization or suprapubic aspirate.

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