

Pediatric Fever Guidelines

This Pediatric Fever Guidelines document is adapted from evidence-based practices for evaluating and managing febrile children aged 3 months to 18 years.

Inclusion criteria

The guideline includes the following criteria for children presenting with fever:

- Well-appearing children
- Aged three months to 18 years
- Temperature $\geq 38^{\circ}\text{C}$ (100.4°F) measured at home in the past 24 hours or determined in a clinical setting
- Without an identifiable source of infection, initially

Exclusion criteria

The guideline excludes children with the following characteristics:

- Neonates less than 3 months of age due to a higher risk of serious bacterial infections.
- Children with evident signs of specific illnesses (e.g., pneumonia, meningitis, urinary tract infection) that require specific management.
- Immunocompromised children or those with significant chronic health issues as they require individualized care.
- Children who show signs of severe distress or illness, such as persistent vomiting, severe headache, stiff neck, or rash, may suggest a more serious underlying condition.

Figure 1

Risk assessment tools for infants one to three months of age		
Laboratory score ⁵⁶ (requires CRP, PCT)	Step-by-step ⁴³ (requires CRP, PCT)	Rochester criteria ⁴⁰ (CRP, PCT not required)
<p>If ill-appearing: high risk</p> <p>Obtain PCT and CRP measurements and urine dipstick</p> <ul style="list-style-type: none"> • PCT < 0.5 ng per mL: 0 points • PCT = 0.5 to 1.9 ng per mL: 2 points • PCT ≥ 2 ng per mL: 4 points • CRP < 40 mg per L: 0 points • CRP = 40 to 99 mg per L: 2 points • CRP ≥ 100 mg per L: 4 points • Urine dipstick with leukocyte esterase, nitrites, or both: 1 point <p>If total score is 3 or more treat as high risk; otherwise treat as low risk.</p>	<p>Assess the following in the order shown:</p> <ul style="list-style-type: none"> • If ill-appearing: high risk • If 21 days or younger: high risk • If leukocyturia is present: high risk • If PCT ≥ 0.5 ng per mL: high risk • If CRP > 20 mg per L: intermediate risk (treat as high risk) • If absolute neutrophil count > 10,000 per mm^3 (10.0×10^9 per L): intermediate risk (treat as high risk) <p>If none of the criteria apply, treat as low risk.</p>	<p>If ill-appearing: high risk</p> <p>If signs of soft tissue infection, skeletal infection, or ear infection: high risk</p> <p>Obtain complete blood count with differential and microscopic urinalysis</p> <ul style="list-style-type: none"> • If WBC count $\geq 15,000$ per mm^3 (15.0×10^9 per L): high risk • If WBC count $\leq 5,000$ per mm^3 (5.0×10^9 per L): high risk • If bands $\geq 1,500$ per mm^3 (1.5×10^9 per L): high risk • If urine WBC count per high-power field ≥ 10: high risk <p>If none of the criteria apply, treat as low risk</p>
<p>CRP = C-reactive protein PCT = procalcitonin WBC = white blood cell</p>		

Figure 2

Evaluation and management of febrile children younger than three years		
Assess risk	High risk, inpatient evaluation	Lower risk, consider outpatient evaluation
<p>Younger than one month</p> <ul style="list-style-type: none"> High risk based on age alone 	<p>Blood tests</p> <ul style="list-style-type: none"> CBC with differential Blood culture PCT and CRP if available <p>Urine tests</p> <ul style="list-style-type: none"> Urinalysis Urine culture <p>Lumbar puncture</p> <ul style="list-style-type: none"> CSF WBC count Protein Glucose CSF culture <p>Chest radiography</p> <ul style="list-style-type: none"> All neonates <p>Begin empiric antibiotics after cultures have been obtained</p>	<ul style="list-style-type: none"> Not appropriate in this age group
<p>One to three months of age</p> <ul style="list-style-type: none"> High risk if signs of serious illness, such as increased respiratory effort, poor arousability, delayed capillary refill, petechial rash. If PCT, CRP available, use laboratory score or step-by-step algorithms to assess risk; otherwise use Rochester criteria (Figure 1) 	<p>Blood tests</p> <ul style="list-style-type: none"> CBC with differential Blood culture PCT and CRP if available <p>Urine tests</p> <ul style="list-style-type: none"> Urinalysis Urine culture <p>Lumbar puncture for ill-appearing children</p> <ul style="list-style-type: none"> CSF WBC count Protein Glucose CSF culture <p>Chest radiography for ill-appearing children or if WBC count > 20,000 per mm³ (20.0 x 10⁹ per L)</p> <p>Begin empiric antibiotics after cultures have been obtained</p>	<ul style="list-style-type: none"> Consider antibiotic treatment depending on results of studies thus far. If good outpatient follow-up available consider close outpatient monitoring; otherwise admit for inpatient monitoring.
<p>Three months to three years of age</p> <ul style="list-style-type: none"> High risk if signs of serious illness, such as increased respiratory effort, poor arousability, delayed capillary refill, petechial rash 	<p>Blood tests</p> <ul style="list-style-type: none"> CBC with differential Blood culture <p>Urine tests</p> <ul style="list-style-type: none"> Urinalysis Urine culture <p>Lumbar puncture if neurologic or meningeal signs are present</p> <ul style="list-style-type: none"> CSF WBC count Protein Glucose CSF culture <p>Chest radiography if respiratory findings suggestive of pneumonia.</p> <p>Begin empiric antibiotics after cultures have been obtained.</p>	<ul style="list-style-type: none"> During influenza season, perform rapid influenza testing. If concern for urinary tract infection or no other source of fever found, perform urine dipstick testing. If leukocyte esterase or nitrites present, obtain urinalysis and urine culture. Chest radiography if physical examination suggestive of pneumonia. Consider antibiotic / antiviral treatment depending on results of studies thus far. If good outpatient follow-up available, consider outpatient monitoring; otherwise admit for inpatient monitoring.

Note: When coronavirus disease 2019 (COVID-19) is circulating, test for that infection.
 CBC = complete blood count; CRP = C-reactive protein; CSF = cerebrospinal fluid; PCT = procalcitonin; WBC = white blood cell.

Reference: Hamilton, J. L., & John, S. P. (2013). Evaluation of fever in infants and young children. *American Family Physician*, 87(4), 254–260. <https://www.aafp.org/pubs/afp/issues/2013/0215/p254.html>