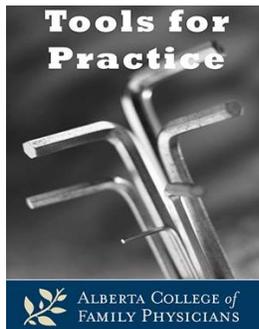


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**Reviewed: October 24, 2013**  
**Evidence Updated: RCT added**  
**Bottom Line: Unchanged**  
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## **Are acetaminophen and ibuprofen equivalent in the treatment of pediatric fever?**

**Clinical Question: If we provide a recommendation regarding the treatment of pediatric fever, is acetaminophen or ibuprofen superior?**

**Bottom-line: Treatment of pediatric fever is debated and should be discussed with parents/patients. If clinicians are going to recommend a treatment, ibuprofen offers superior fever reduction with no increase in adverse events.**

### **Evidence:**

- A meta-analysis and two Randomized Controlled Trials (RCT) provide some guidance:
  - Review of ibuprofen vs. acetaminophen:<sup>1</sup>
    - 10 trials, 1078 patients.
    - Dose: ibuprofen 5-10mg/kg and acetaminophen 10-15mg/kg.
    - Outcome:
      - Ibuprofen statistically superior at two, four, and six hours.
      - At 4-6 hours approximately 15% more ibuprofen patients will have fever reduction (Number Needed to Treat (NNT) 7).
  - PITCH: RCT (156 children age six months to six years) comparing ibuprofen 10mg/kg q6-8 hours, acetaminophen 15mg/kg q4-6 hours, or both.<sup>2</sup>
    - Outcomes (statistically significant):
      - Time without fever in first four hours: Combination superior to acetaminophen by 55.3 minutes but not ibuprofen.
      - Combination had reduced fever time in first 24 hours.
        - Acetaminophen 4.4 hours more.
        - Ibuprofen 2.5 hours more.
    - Authors recommended ibuprofen due to superiority to acetaminophen, similar to combination with less risk of excess dosing.
  - Unblinded, single-dose, grossly unpowered (n=46) RCT found:
    - Acetaminophen/ibuprofen combinations resulted in more children afebrile at four hours than on ibuprofen alone (NNT 4).<sup>3</sup>

- Results at high risk of bias.

**Context:**

- Overdosing of medications reported in 21% children in PITCH.<sup>2</sup>
- Debate:
  - No evidence that fever itself is harmful.<sup>4</sup>
  - Antipyretics not shown to prevent febrile seizures.<sup>5,6</sup>
  - No evidence that treating fever in mild infections is harmful (unless overdosed) and present evidence shows it does not prolong illness.<sup>7</sup>
  - If treated, goal should likely be comfort (although no studies have investigated “comfort” in fever).
- Adverse effects of ibuprofen compared to acetaminophen:
  - Asthma: Ibuprofen carries the same or perhaps slightly lower risk vs. acetaminophen.<sup>8</sup>
  - Reye Syndrome: No increased risk.<sup>9,10</sup>
  - GI effect and Renal: No evidence of risk.<sup>11</sup> Canadian Pediatric Society advises against ibuprofen if a child is not “drinking reasonably well.”<sup>12</sup>
  - “Systemic” Reaction: No evidence of risk.<sup>11</sup>

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