



## “Not Milk?”: Avoiding lactose-containing products during acute pediatric diarrhea

### CLINICAL QUESTION

**Do lactose-containing formulas/diets worsen acute pediatric diarrhea?**

### BOTTOM LINE

**Breastfed children should continue breastfeeding. In formula-fed children under two years, temporarily switching to lactose-free infant formula shortens diarrhea duration by ~18 hours and reduces treatment failure (9% versus ~17% control) at 24-72 hours. The effects of cow’s milk are investigated in only three small, older randomized controlled trials and results are likely unreliable.**

### EVIDENCE

- Results statistically different unless stated.
- Four systematic reviews with 22-33 RCTs, 2215-2973 mostly hospitalized (clinically stable) formula-fed children with acute diarrhea receiving oral rehydration.<sup>1-4</sup>
  - Lactose-free versus lactose-containing products (infant formula/foods): Focusing on the largest systematic review (children’s ages 1-28 months),
    - Duration of diarrhea:<sup>1</sup> Reduced by 18 hours with lactose-free formulas/foods.

- Median diarrhea duration (calculation by PEER): ~2.75 versus ~3.5 days (lactose-containing).
    - Treatment failure (typically: Continued/worsening diarrhea or vomiting, need for rehydration, or weight loss).
      - 9% versus 17% (lactose-containing),<sup>1</sup> number needed to treat (NNT)=14 over 24-72 hours.
      - Duration of hospitalization<sup>1</sup> and weight:<sup>1,2,4</sup> No difference.
    - Results of other systematic reviews similar.<sup>2-4</sup>
  - Diluted versus non-diluted lactose-containing formula.
    - Systematic review (9 RCTs, 687 children)<sup>1</sup> found diluted (25-50%) lactose-containing formula reduced treatment failure: 11% versus 17%, NNT=17 over 24-72 hours.
    - Other found similar results.<sup>4</sup>
    - Diarrhea duration<sup>1,3,4</sup> and weight:<sup>1,2</sup> No difference.
  - RCTs in above systematic reviews comparing full-strength cow's milk to:
    - Diet without milk: 2 RCTs<sup>5,6</sup> (~70 children each, mean ages: 7-15 months)
      - Diarrhea duration: No difference.<sup>5,6</sup>
    - Diluting milk: 1 RCT<sup>7</sup> (62 children, mean age: 22 months).
      - Treatment failure: No difference.
- Limitations:
  - Many RCTs unblinded;<sup>1,5,6,7</sup> baseline illness duration not reported;<sup>1-4</sup> statistics difficult to clinically interpret.<sup>2,4</sup>
  - RCTs investigating the effects of cow's milk are old<sup>5-7</sup> (>30 years old) and not generalizable (gave cow's milk to infants at 3-6 months).<sup>5</sup>
  - No RCTs in older children.

## CONTEXT

- Acute diarrhea guidelines recommend:
  - Continued (or increased) breastfeeding, including during initial rehydration.<sup>8,9</sup>
  - Resumption of usual diet after rehydration.<sup>10,11</sup>
- While guidelines suggest that changing/diluting formula may be unnecessary, recommendations were made prior to currently available systematic reviews.<sup>10,11</sup>

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## AUTHORS

**Candra Cotton**, BSc Pharm, **Jen Potter**, MD CCFP, **Samantha S Moe**, PharmD, ACPR

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