



“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.¹⁻⁴
 - Lactose-free versus lactose-containing products (infant formula/foods): Focusing on the largest systematic review (children's ages 1-28 months),
 - Duration of diarrhea:¹ 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),¹ number needed to treat (NNT)=14 over 24-72 hours.
 - Duration of hospitalization¹ and weight:^{1,2,4} No difference.
- Results of other systematic reviews similar.²⁻⁴
- Diluted versus non-diluted lactose-containing formula.
- Systematic review (9 RCTs, 687 children)¹ found diluted (25-50%) lactose-containing formula reduced treatment failure: 11% versus 17%, NNT=17 over 24-72 hours.
 - Other found similar results.⁴
 - Diarrhea duration^{1,3,4} and weight:^{1,2} No difference.
- RCTs in above systematic reviews comparing full-strength cow's milk to:
 - Diet without milk: 2 RCTs^{5,6} (~70 children each, mean ages: 7-15 months)
 - Diarrhea duration: No difference.^{5,6}
 - Diluting milk: 1 RCT⁷ (62 children, mean age: 22 months).
 - Treatment failure: No difference.
- Limitations:
 - Many RCTs unblinded;^{1,5,6,7} baseline illness duration not reported;¹⁻⁴ statistics difficult to clinically interpret.^{2,4}
 - RCTs investigating the effects of cow's milk are old⁵⁻⁷ (>30 years old) and not generalizable (gave cow's milk to infants at 3-6 months).⁵
 - No RCTs in older children.

CONTEXT

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

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