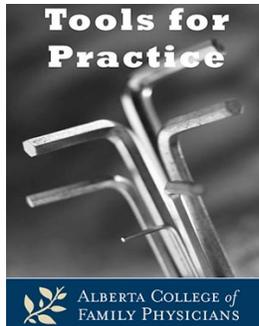


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Drinking in the Evidence Around Mild-Moderate Dehydration Management in Kids with Gastroenteritis

Clinical Question: What is the best management of mild-moderate dehydration in children with gastroenteritis?

Bottom Line: For children with mild to moderate dehydration due to gastroenteritis, oral rehydration is equivalent to IV therapy. Half-strength apple juice is as good as electrolyte maintenance solution and appears to be superior in children ≥ 24 months. Liquid versus frozen administration is likely a matter of preference.

Evidence:

- Systematic review of 31 Randomized Controlled Trials (RCTs) of mild to moderate dehydration from gastroenteritis in developed countries.¹
 - Oral Rehydration (electrolyte maintenance solutions) versus Intravenous (IV), no significant difference in:
 - Hospitalization (three RCTs, 136 patients): Relative Risk 0.80 (0.24-2.71).
 - Return to Emergency Department (three RCTs, 193 patients): Relative Risk 0.86 (0.39-1.89).
- RCT of 647 children, mean age 28 months with generally mild dehydration (82% scored ≤ 1 out of 8 on clinical dehydration scale). Randomized to half-strength apple juice or preferred fluid versus apple-flavored, sucralose-sweetened pediatric electrolyte maintenance solution, 5 mL administered every 2-5 minutes while in the emergency department.²
 - Those who vomited received oral ondansetron.
 - Composite outcome: Treatment failure (including return to care, hospitalization, and IV rehydration).
 - 17% apple juice versus 25% electrolyte solution, Number Needed to Treat (NNT) ~12.
 - Treatment equal if age <24 months; if ≥ 24 months dilute apple juice superior NNT ~7.

Context:

- One crossover, open label trial³ of 91 children presenting to ER with mild-moderate dehydration found frozen electrolyte replacement solution preferable to liquid with a NNT of 3. Only the frozen solution was sweetened.

- Ondansetron reduces the risk of requiring IV therapy (NNT~5) and hospitalization (NNT~14) in vomiting children.⁴
- Most guidelines currently recommend oral rehydration solutions as first line with frequent small volumes (5 mL every 2-3 minutes)⁵ and early refeeding once hydrated.⁶
- Oral rehydration solutions are approximately 4x the cost of regular juice (8x the cost of juice diluted 1:1 with water).

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Disclosure:

Authors do not have any conflicts of interest to declare.

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