

## **ORF 101: Oral Rehydration for the Practitioner**

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These guidelines apply to otherwise healthy children with acute gastroenteritis from ages 1 month to 5 years. Oral rehydration followed by early refeeding is the treatment of choice for children with mild to moderate dehydration. **IV rehydration is generally not required** in these patients. Also non-physiologic fluids, such as Gatorade, Jello-water, flat Seven-up, apple juice, soup broth should not be used. And also note that the prolonged clear liquid diet is contraindicated.

### Evaluation of dehydration:

Mild dehydration (3-5%) – normal mental status, mild thirst, warm extremities, normal cap. refill.

Moderate dehydration (6-9%) – normal mental status to slightly listless, moderate thirst, delayed cap. refill, dry mucous membranes, sunken orbits.

Severe dehydration ( $\geq 10\%$ ) – normal mental status to lethargic or comatose, very thirst or unable to indicate thirst, cool and mottled extremities, sunken orbits. Requires emergent IV hydration, not covered in this paper.

### Oral Rehydration:

Acceptable oral rehydration solutions include: Pedialyte, Infalyte, Rehydralyte. Generally, children who refuse these solutions are not dehydrated. Initially, oral rehydration may seem more labor intensive than IV therapy and does take an investment of time to teach the parents. However, parents can soon learn this task and continue it on their own with only minimal monitoring by the nursing staff. Parents should then be able to use this technique during future episodes of gastroenteritis for their children. This technique can be used in children with all but severe vomiting. Finally, remember that breast feeding can be continued during the rehydration phase discussed here.

**For mild dehydration give 50ml/kg** plus ongoing losses over 4 hours. Start by giving 5 ml's every 1-2 minutes. If this goes well you may increase the amount of fluid and lengthen the duration between drinks.

**For moderate dehydration give 100 ml/kg** plus ongoing losses over 4 hours. Give in aliquots as noted above for mild dehydration.

In each case use a syringe or teaspoon to give the solution. Time these aliquots using a clock. Assist and watch the parent initially as they get started with this, then monitor the child and parent periodically during the rehydration process.

Early Refeeding:

Once initial rehydration is complete refeeding should begin. As mentioned above the 24-48 hour or even longer clear liquid diet no longer has a place in management of acute gastroenteritis. In fact early refeeding can decrease the stool output. Foods to start refeeding with include breast milk, formula, and cow's milk. A switch to soy formula is not necessary or generally beneficial. Other foods include complex carbohydrates such as rice, wheat, potatoes, bread and cereals. Also lean meats, yogurt, fruits and vegetables are okay. Note that these foods differ from those in the no longer recommended BRAT diet. Fatty foods and foods high in simple sugars should be avoided.

Antidiarrheal Compounds: **None are currently recommended** for the treatment of gastroenteritis in children.

For your information below are the compositions of Pedialyte vs. non-physiologic liquids:

	<u>Na(mEq/l)</u>	<u>K(mEq/l)</u>	<u>Glucose(mmol/l)</u>	<u>Osmolality</u>
Pedialyte*	45	20	140	250
Apple juice	3	28	690	730
Tea	0	0	0	5
Ginger ale	3	1	500	540
Chicken broth	250	8	0	450
Gatorade	24	3	255	330

\*Pedialyte, Infalyte, Rehydralyte have similar compositions. Also in developing countries the World Health Organization has developed an oral rehydration solution that has a higher salt content than commercial solutions used in developed countries. However, the commercial oral rehydration solutions available in North America such as those listed above have been found efficacious for mild and moderate dehydration in North America.

Adapted from the American Academy of Pediatrics Practice Parameter (Pediatrics, vol 97, p. 424, 1996). Articles from NEJM, vol 323, p 891, 1990 and American Family Physician, vol 58 p 1769, 1998 also used.