

**Elizabeth Bruns, R.D., L.D.**  
**Nutrition Training Specialist**  
**WIC, Texas Department of Health**

# **Nutritional Management of Diarrhea and Use of Oral Electrolyte Solutions**

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# I. Introduction and Background Information

## A. Definition

## B. Normal Stool Patterns

<b>Formula-Fed Infants and Children</b>	
<i>Child's Age</i>	<i>Number of Stool Episodes/Day</i>
0 - 7 days	_____
8 - 30 days	_____
4 - 12 months	_____
1 - 4 years 85% 96%	_____ _____

<b>Breast-Fed Infants</b>	
Day 1	_ stool
Day 2	_ stools
Day 3	_ stools
Day 4	_ stools

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## **C. Characteristics of Childhood Diarrhea**

- **Floating stools:**
- **Sloppy stools:**
- **Steatorrhea:**
- **Blood and/or mucous in stools:**

## **D. Etiology of Acute Diarrhea**

### **1. Acute Diarrhea:**

### **2. Chronic Diarrhea**

## **E. Consequences of Diarrhea**

# **II. Use of Oral Electrolyte Solutions (O.E.S.)**

## **A. Definitions**

**O.R.T.** . . . \_\_\_\_\_ cure diarrhea  
 \_\_\_\_\_ decrease the duration of  
 diarrhea  
 \_\_\_\_\_ prevent or reverse dehydration  
 \_\_\_\_\_ maintain normal fluid and  
 electrolyte levels

## B. Rationale and Physiologic Basis

<i>Main Ingredients in O.E.S.</i>	<i>Function</i>
Water Sodium (Na) Potassium (K)	_____ _____ _____
_____ _____ _____	Improves absorption by escorting Na and K into the cells

**The Proportion of Ingredients in O.E.S. is Very Important**

## C. Oral Electrolyte Solutions (O.E.S.)

<b>Commercially-Available O.E.S.</b>				
Solution	mmol/L CHO	mmol/L Na	mmol/L K	osmolality
Pedialyte	140	45	20	250
Pediatric Electrolyte	140	45	20	250
Infalyte/Ricelyte	70	50	25	200
Ceralyte	60	70	20	216
<b>Commercially-Available O.R.S.</b>				
WHO/UNICEF	111	90	20	310
Rehydralyte	140	75	20	310

## D. Fluids to Avoid

	Glucose g/l	NA meq/l	K meq/l	Osmolality mmol/l
Pedialyte	25	45	20	250
Cola drink	50-150	2	0.1	550
Ginger ale	50-150	3	1	540
Apple juice	100-150	3	20	700
Chicken soup/broth	0	250	5	450
Tea	0	0	0	5
Gatorade	20	3	3	330

## E. Nutrition During the Management of Diarrhea

### Modified B\*R\*A\*T\* Diet

- \*B \_\_\_\_\_,mashed
- \*R \_\_\_\_\_(not brown or whole grain)
- \*A \_\_\_\_\_,unsweetened
- \*T \_\_\_\_\_(not wheat or whole grain)

## F. Referral and Treatment

### 1. Signs of Dehydration

<b>Signs of Dehydration</b>				
<b>Characteristics</b>	Normal	Dehydration		
		<i>Mild</i>	<i>Moderate</i>	<i>Severe</i>
% Weight Loss	0	3 - 5%	6 - 9%	10+%
Mental Status	Normal Alert	Normal Alert	Irritable Restless	Lethargic Unconscious
Eyes	Normal	Normal	Sunken	Very sunken and dry
Tears	Present	Present	Absent	Absent
Mouth/Tongue	Moist	Slightly dry	Dry	Very dry
Thirst	Not thirsty; drinks normally	Slightly thirsty; drinks normally	Thirsty; drinks eagerly	Not able to drink or drinks poorly
Skin	Pinch retracts immediately	Pinch retracts quickly	Pinch retracts slowly	Pinch retracts very slowly

## 2. MCH Protocol

### a. When to seek medical attention

#### b. Use of O.E.S.

#### c. Continuation of appropriate foods to prevent malnutrition

#### d. Proper sanitation to prevent spread of diarrhea

#### e. Avoidance of over-the-counter (OTC) products for treatment of diarrhea, unless they have been instructed to do so by a physician

## Terms and Definitions

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**DEHYDRATION:** Reduction of water content; loss of water from a system; water out exceeds water in

**DIARRHEA:** An increase in frequency, fluidity, and volume of stool, relative to an individual's usual pattern

**ENCOPRESIS:** Fecal incontinence; involuntary passage of feces

**ENTEROCOLITIS:** Inflammation of the lining of both the small and large intestines

**GIARDIA LAMBLIA:** Parasites that inhabit the small intestine of man and other animals; they attach themselves to the intestinal lining and interfere with the absorption of fats; associated with recurring attacks of diarrhea, steatorrhea, flatulence, and acute discomfort

**HYPERNATREMIA:** An abnormally high level of plasma sodium (sodium in the blood)

**IATROGENIC:** A condition induced by treatment; denotes an unfavorable response to treatment, e.g. nausea as a result of radiation or chemotherapy

**MECONIUM:** First feces of a newborn infant; stool that an infant has been storing since before birth; almost odorless and of a tarry consistency; present 3-4 days after birth

**OLIGURIA:** Diminished production of urine and/or urine retention; noticeable after profuse perspiration, bleeding, diarrhea

**O.E.S.:** Oral electrolyte solutions; commercially-available or home-made solutions that contain fluid and electrolytes necessary to replace those lost in attacks of diarrhea

**O.R.T.:** Oral rehydration therapy; the treatment of choice for fluid and electrolyte replacement due to mild-moderate dehydration

**PERISTALSIS:** The movement of the intestine, characterized by waves of alternate circular contraction and relaxation by which the contents are propelled onward

**REHYDRATION:** The return of water to a system after its loss

**ROTAVIRUS:** A group of RNA viruses that are wheel-like in appearance; includes the human gastroenteritis viruses

**STEATORRHEA:** Fat indigestion; passage of fat in large amounts in the feces; fatty stools

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