



الكلية : الطب

القسم او الفرع : طب الاسرة والمجتمع

المرحلة: الرابعة

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اسم المادة بالغة العربية : صحة الطفل

اسم المادة باللغة الإنكليزية : **Child Health**

اسم المحاضرة الثالثة باللغة العربية: السيطرة على الاسهال عند الاطفال

اسم المحاضرة الثالثة باللغة الإنكليزية: **Control of Diarrhea in Children**

Control of Diarrhea in Children

Diarrhea remains one of the leading causes of morbidity and mortality in children under 5 years old, particularly in low- and middle-income countries. It is both preventable and treatable, yet each year it kills around **760,000 children under five** globally. Diarrhoea is a preventable and treatable condition, yet it remains a major cause of child mortality due to dehydration and malnutrition. Proper classification, treatment, and prevention strategies—especially at the community and household level—are crucial in reducing its burden.

Definitions and Classification

Diarrhea: The passage of three or more loose or watery stools at least 3 times within 24 hours. Consistency is more important than frequency. Note that breast fed infants usually pass semi-solid, pasty and yellow stools. Sometimes, they pass stool after each breast feed. This is not diarrhea. Unfortunately, many doctors misinterpret these stools as diarrhea and they give the wrong advice to the mothers to stop breast feeding. This is incorrect practice

Types:

Acute diarrhea: Lasts less than 14 days.

Persistent diarrhea: Lasts 14 days or longer.

Dysentery: Diarrhoea with visible blood in stool, e.g. :

Amoebic dysentery (*Entamoeba histolytica*), and **Bacillary dysentery** (e.g. *Shigella* spp.)

Epidemiology and Risk Groups

- Major victims: **Children under 5 years.**
- Consequences:
 - **Growth failure**
 - **Malnutrition**
 - **Increased susceptibility to infections**
- Contributing factors:
 - Contaminated water
 - Poor hand hygiene during food preparation or feeding
 - Spoiled food due to high ambient temperatures

Pathophysiology and Impact on Nutrition

Growth Deficit Due to Diarrhea

- Weight loss: **~25 g per day of diarrhea**
- Malnutrition is **multi-factorial**:
 - **Reduced intake**: Anorexia, withholding food
 - **Malabsorption**: Due to rapid transit, gut inflammation
 - **Catabolic losses**: Vomiting, fever, increased energy expenditure

Vicious Cycle

Malnutrition → Weakened immunity → More diarrhea → Further malnutrition

- At-risk groups:
 - Artificially fed infants
 - Weaning-age children

Dehydration

- **Definition**: Loss of water and electrolytes (Na, K, Cl, HCO₃⁻)
- **Causes**: Stool, vomiting, fever, urine, sweat, respiration
- **Result**: Electrolyte imbalance, shock, death if untreated

Clinical Classification of Dehydration

Sign	Severe (C)	Some (B)	None (A)
General Condition	Lethargic, unconscious	Restless, irritable	Well, alert
Eyes	Sunken	Sunken	Normal
Thirst	Unable to drink	Eager to drink	Drinks normally
Skin pinch	Goes back very slowly	Goes back slowly	Goes back quickly
Classification	Severe Dehydration	Some Dehydration	No Dehydration
Treatment Plan	Plan C (Hospital)	Plan B (Health Center)	Plan A (Home)

Treatment Plans

Plan A – For No Dehydration

Goal: Prevent dehydration

- Give extra fluids: ORS & home fluids
- Continue breastfeeding/feeding

- Teach mother:
 - How to prepare ORS:
 - 1 sachet in 1 liter of clean water
 - Discard after 24 hours
 - Give 50–100 mL after each loose stool
 - Recognize danger signs (with visual aids)

Plan B – For Some Dehydration

Goal: Correct dehydration

- ORS: **Weight (kg) × 75 mL** over 4 hours
- Monitor every hour
- Continue feeding
- If vomiting, wait 10 mins then restart
- Reassess after 4 hours and reclassify

Plan C – For Severe Dehydration

Goal: Urgent fluid resuscitation

- **IV route** preferred (Ringer’s Lactate or NS)
- Dosage:
 - **<12 months:**
 - First 30 mins: 30 mL/kg
 - Next 2.5 hours: 70 mL/kg
 - **12+ months:**
 - First hour: 30 mL/kg
 - Next 5 hours: 70 mL/kg
- Use nasogastric tube if IV access is unavailable

8. Oral Rehydration Solution (ORS)

Standard WHO ORS Composition (per 1L)

- Sodium chloride (NaCl): 3.5 g
- Sodium bicarbonate (NaHCO₃): 2.5 g (or 2 g trisodium citrate)
- Potassium chloride (KCl): 1.5 g
- Glucose: 20 g

Advantages

- Inexpensive, effective
- Easy home use
- Prevents 95% of dehydration cases

Preparation

- Use boiled, cooled water
- In cold climates: warm to 40°C to improve acceptability

Zinc Supplementation

- Reduces diarrhea **duration by 25%**
- Reduces stool **volume by 30%**

Management of persistent diarrhea

- **<6 months or dehydrated:** Refer to hospital
- **>6 months, not dehydrated:**
 - Dietary management:
 - Dilute animal milk or replace with yogurt
 - Increase energy: 6 meals/day, enriched cereals, fat, vegetables, meat/fish
 - Reassess in 5 days
 - If resolved: resume regular diet + 1 extra meal/day for 1 month
 - Use growth charts for monitoring

Management of Dysentery (Blood in Stool)

- **Suspected Bacillary Dysentery (Shigella):**
 - Severe symptoms, no amoeba in stool: → **Co-trimoxazole**
- **Suspected Amoebic Dysentery:**
 - Less severe, amoebae in stool: → **Metronidazole (Flagyl)**

Drugs NOT Recommended in Diarrhea

- **Antibiotics** (unless confirmed bacterial)
- **Antiprotozoals** (unless confirmed)
- **Mycostatin:** Only for oral/anal thrush
- **Anti-motility drugs:** May cause paralytic ileus
- **Pectocaulines:** Can lead to persistent diarrhoea
- **Anti-emetics:** May cause CNS toxicity

Prevention of diarrhea: Key strategies:

- Safe drinking water
- Improved sanitation
- Handwashing with soap
- Exclusive breastfeeding for first 6 months
- Proper food and personal hygiene
- Health education
- **Rotavirus vaccination**