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# **Definition**

- Diarrhoea is defined as the passage of loose, liquid or watery stools.
- Stools passed more than 3 times a day.
- Recent change in consistency and character of stools important than number of stools.



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**ETIOLOGY** 

- Viruses
- Bacterial causes
- Others



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**VIRUSES** 

Many DIARRHOEAL diseases are caused by viruses

 Rotaviruses –leading cause of severe, dehydrating diarrhoea in children aged less than 5 years globally.



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- Astroviruses
- Adenoviruses
- Calciviruses
- Coronaviruses
- Norwalk group of viruses
- Enteroviruses
- Cytomegalovirus



# BACTERIAL CAUSES

- V. Cholerae 01
- Salmonella
- Shigella
- Enterotoxigenic E.coli
- Campylobacter jejuni

#### Less known pathogens

- Yersinia enterocolitica
- V.parahaemolyticus





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### **NON INFECTIVE CAUSES**

- Osmotic diarrhoea (lactose intolerance)
- Food intolerance
- Antibiotic induced
- Inflammatory bowel disease
- Celiac disease



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### **PATHOGENESIS**

- 1. Osmotic diarrhoea
- 2. Secretory diarrhoea

Rota virus produce diarrhoea by both mechanisms



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#### **OSMOTIC DIARRHEA**

Mechanism

When intestine contains lot of unabsorbed food adds to the osmotic load of intestine; it osmotically drags fluid into the intestine and hence produce diarrhoea.

- Occurs in
- 1. Intestinal villus damaged eg. Infection
- 2. Consumption of a lot of sugar or related ones



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# MARKERS OF OSMOTIC DIARRHOEA

- Stool sodium less than 50 mEq/L
- Stool reaction acidic
- Stool reducing substance positive pH less than 5.5
- Discontinuation of feed results in improvement
- Perianal excoriation
- Volume of stool less than 200ml/day

Eg. lactose intolerance



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#### **SECRETORY DIARRHOEA**

- Cells in villi absorptive and in crypts secretory
- Toxin of cholera affect secretory cells and there is outpouring of fluids and hence diarrhoea
- Since there is active secretion, the diarrhoea stool is rich in sodium and thus produce severe dehydration rapidly

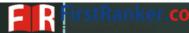


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#### **MARKERS OF SECRETORY DIARRHOEA**

- Dehydration occurs rapidly and is often severe
- Dyselectrolytaemia is more common
- Stool sodium greater than 70mEq/ml
- Stool pH above 5.5;stool reducing substance negative
- No effect with discontinuation of feeding
- Volume of stool high greater than 200ml/day

Eg.cholera



#### CLINICAL TYPES

- 4 clinical types
- 1. Acute watery diarrhoea
- 2. Acute bloody diarrhoea
- 3. Persistent diarrhoea
- Diarrhoea with severe malnutrition (Marasmus and Kwashiorkor)



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# **ACUTE WATERY DIARRHOEA**

- Lasts for hours to days
- Main danger dehydration
- Weight loss occurs if feeding not continued
- Caused by V. Cholera, E. Coli, Rotavirus



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# **ACUTE BLOODY DIARRHOEA**

- Also called dysentery
- Main danger damage of the intestinal mucosa sepsis and malnutrition, dehydration
- Marked by visible blood in stools
- Most common cause shigella



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#### PERSISTENT DIARRHOEA

- Last 14 days or longer
- Main danger is malnutrition and serious non -intestinal obstruction
- Dehydration may also occur
- Persons with other illness such as AIDS are more likely to develop persistent diarrhoea



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# DIARRHOEA WITH SEVERE MALNUTRITION

 Main danger severe systemic infection, dehydration, heart failure, and vitamin and mineral deficiency

