

Medicine

Edition 8.5

Marrow

Volume - 1

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DIARRHEA

----- Active space -----

Definition :

- Stool water content >200 mL/24 hours.
- According to Bristol stool chart :
 - Type 1 & 2 : Constipation.
 - Type 6 & 7 : Diarrhea.

Physiology of absorption :

1. Luminal.
2. **mucosal** :
 - Small intestine (majority).
 - maximum absorption.
3. Post mucosal.



macronutrients for absorption :

- Fat :
 - most calorie dense nutrient.
 - most specific nutrient affected in malabsorption.
- Carbohydrates.
- Proteins.

Frequency Classification

00:03:00

	Acute	Persistent	Chronic
Duration	<2 weeks (Nuisance symptom)	>2 weeks	>4 weeks

Etiology :

Acute diarrhea :

Infectious : **viral infection** (m/c).

- m/c in adults : Norovirus.
- m/c in children : Rotavirus.
- Self-limiting.

----- Active space -----

Chronic diarrhea :

D/d	Etiology
Osmotic	malabsorption
Secretory	• Tumor • Toxin
Inflammatory	Inflammatory bowel disease

Note :

malassimilation :

- maldigestion + malabsorption.
- Diminished intestinal digestion/absorption of one or more nutrients.

Pathological Classification

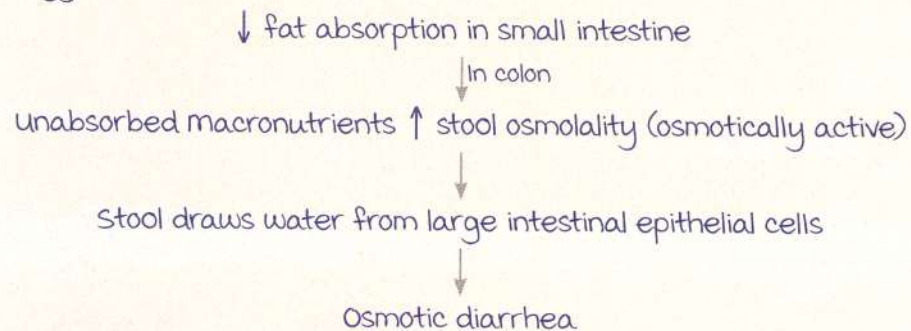
00:10:13

I. Osmotic Diarrhea :

most consistent clinical symptom of malabsorption.

Steatorrhea :

- **Hallmark** of malabsorption.
- Definition : Passing of pale, bulky, fatty, malodorous, greasy stools.
- Clinical presentation : Diarrhea (most consistent clinical finding).
- Pathology :

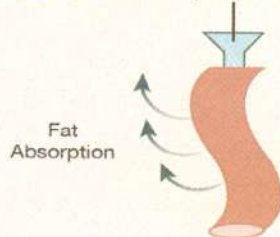


- Investigations :

a. 72 hour fecal fat test : **Gold standard**.

Procedure :

Fat input = 100 g/day



Normal : <7 g/day

- >7 g/day for 3 days (D_3 , D_4 , D_5)
- Stool fat excretion $\geq 7\%$

b. Qualitative stool fat :

- **Sudan III.**
- Sudan IV.
- Oilred O.

} Steatorrhea

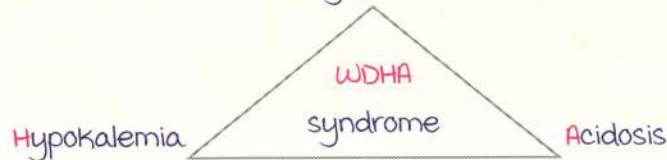
2. Secretory Diarrhea

----- Active space -----

Etiology :

1. Toxins → ETEC, V. cholera (heat labile toxin)
→ Enteropathogenic virus (Rotavirus)

2. Tumours : VIPoma → Watery Diarrhoea



Note :

No structural damage seen.

	Osmotic diarrhoea	Secretory diarrhoea
Stool osmotic gap	Increased (>100 mOsm/kg)	Normal/decreased (< 50 mOsm/kg). ↑ stool $\text{Na}^+ + \text{K}^+$ (By toxins).
Response to fasting	Improvement	No change
Stool pH	<5.5 (Fermentation of unabsorbed carbohydrates → Acids)	>6.0

Note :

Stool osmotic gap

- measured osmolality (osmometer) - calculated osmolality

$$290 - 2 (\text{Stool } \text{Na}^+ + \text{K}^+)$$
- Normal : 50-100 mOsm/kg.

3. Factitious Diarrhoea :

Clinical presentation :

- Adolescent female.
- Chronic diarrhea.
- Fatigue.
- Weight loss.

----- Active space ----- Findings :

Stool collection	Stool osmolality
Unsupervised (mixed with water)	Very low (~ 16 mOsm/kg)
Supervised	Normal (~ 279)

Anatomical Classification

00:32:48

Small Intestinal vs. Large Intestinal Diarrhea :

		Small intestinal diarrhea	Large intestinal diarrhea
Etiology		- Osmotic. - Secretory : ETEC - Vibrio cholera	- Infections : Invasive organisms (Shigella) - Inflammation : Ulcerative colitis
Clinical presentation		Large ($\downarrow$ nutrient absorption)	Small
Diarrhoea	Volume		
	Consistency	Watery	Watery
	Frequency/urgency	$\downarrow$	$\uparrow$
	Pus/blood/mucus	Absent	Present
	Tenesmus	Absent	Present
	Dyschezia	Absent	Present
Abdominal pain		Absent	Present
Fever		Absent	Present
Abdominal cramps		Present	Present
Bloating		Present	Present
Weight loss		Present (if persistent)	Rare
Vomiting		maybe present	Rare
Steatorrhoea		Present	Absent