

CASE I: BODY SYSTEM

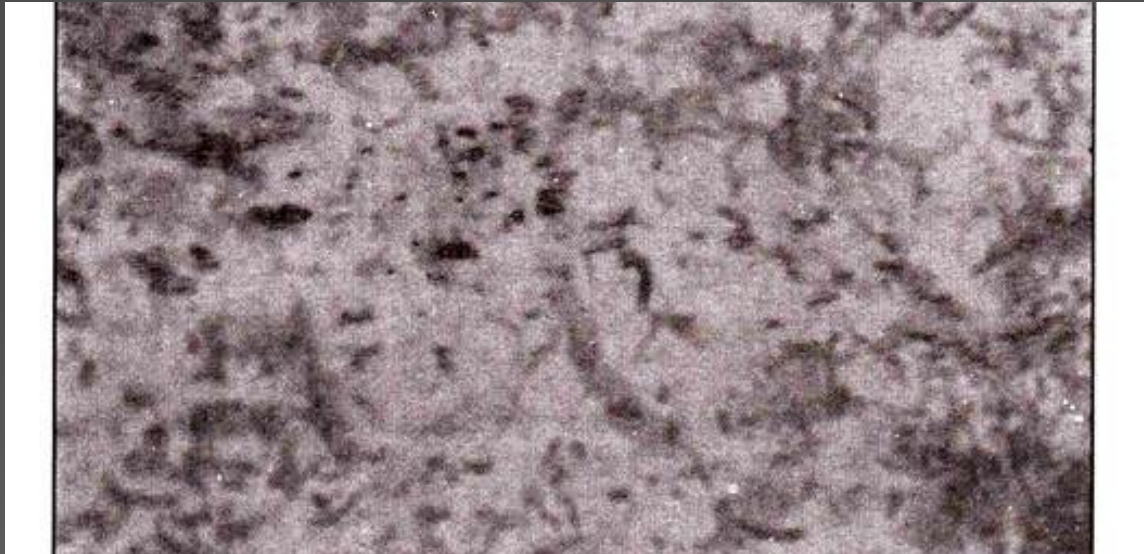
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V. CHOLERAЕ

Main Symptoms of the Bacterial Infection

- Intense Diarrhea
- Vomiting and Nausea
- Dehydration
- Leg Cramps

CHARACTERISTICS OF CULTURE



V. Cholera 100 ×
magnified

TARGETED BODY SYSTEM

- ▶ V. Cholerae targets the gastrointestinal system
- ▶ Infection happens when high concentration of the bacterium gets into
The small intestine
- V. Cholera excretes toxins called entotoxins
- - This disrupts the membrane of the cell channel proteins which causes absorptive dysfunction

FUNCTION OF SMALL INTESTINE

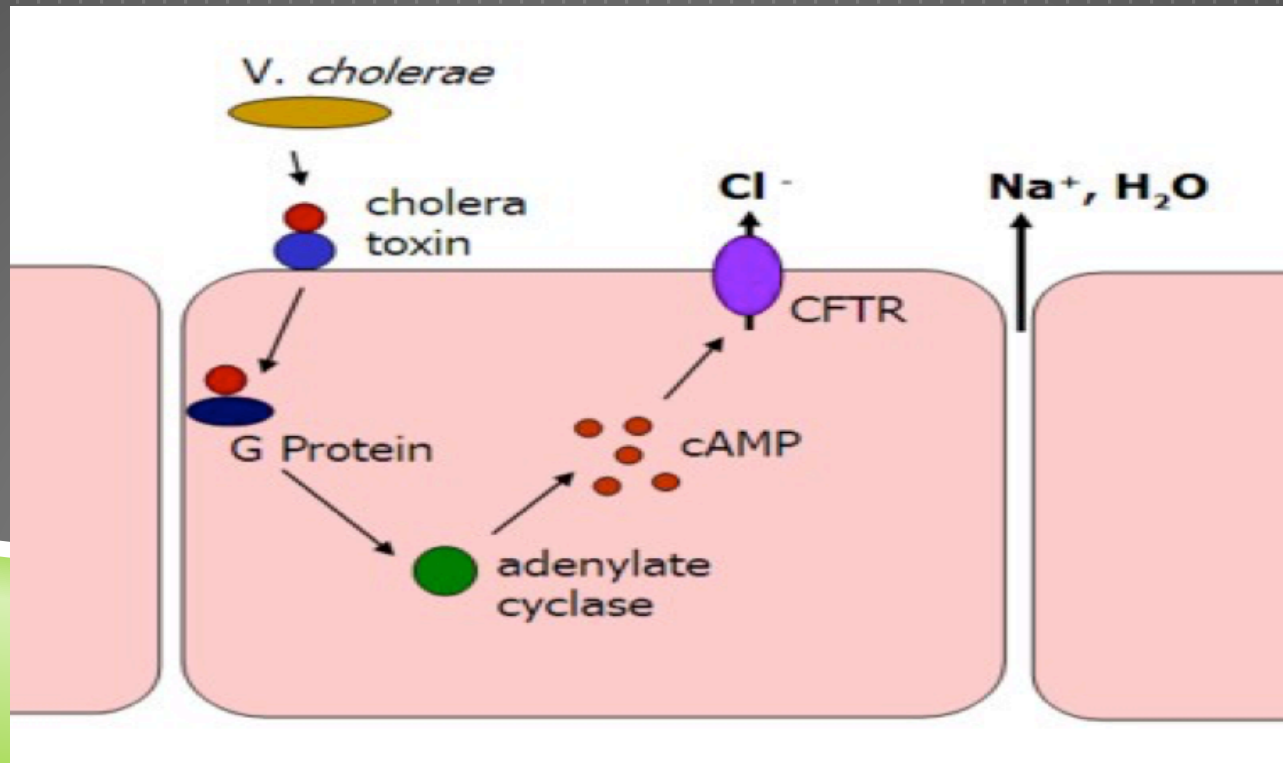
- Absorb majority of nutrients into the blood stream/ fluids
- Breaking down of food
- Secretion
- Small intestine is connected to of stomach (duodenum) and large intestine



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V. CHOLERA AND DISTURBANCE OF SMALL INTESTINE

- ▶ Bacteria bind to epithelium and release their toxins
- ▶ -trigger of increase in cAMP
- ▶ Leads to high flow of Na^+ into epithelium/ secretion of Cl^- ions into Lumen



EFFECT OF TOXIN/ RESULT

- ▶ V. Cholerae toxins bind to ganglioside receptors

Inhibition of Na^+/H^+ by toxin

- Leads to secretion of Cl^- by Cystic fibrosis trans membrane conductance regulator
- Result in excess water into lumen and loss of electrolytes
- Excretory of fluids via diarrhea

TREATMENT

- ▶ Immediate rehydration of fluids with high level of electrolytes
- ▶ IV rehydration
- ▶ Antibiotics prescription by primary care physician

Common antibiotics: **tetracycline, doxycycline, furazolidone, or ciprofloxacin**

- **Stool sample taken from patient and culture is tested**



PREVENTION

- ▶ Vaccination before travelling
- ▶ Good hygiene
- ▶ Drink only filtered water
- ▶ Precautions before eating food while travelling in area of epidemic

IS INFECTED INDIVIDUAL ENDANGERED TO PUBLIC?

- ▶ Bacteria gets secreted via stool
- ▶ May be infected again by different serotype
- ▶ After symptoms passed by individual, the bacteria remains in stool for a week or more