

# Alimentary Infections

These infectious agents enter the human body through the digestive tract. They are caused by the consumption of contaminated food with infectious agents, which leads to food poisoning. These infections lead to gastroenteritis that typically involves diarrhoea, vomiting, and abdominal cramps. These symptoms usually begin 12–72 hours after contracting the infectious agent and if due to viral agent usually lasts less than one week. Some viral causes may also be associated with fever, fatigue, headaches, and muscle pains. If the stool is bloody the cause is less likely to be viral and more likely to be bacterial. Some bacterial infections may be associated with severe abdominal pain and may last for weeks without treatment.<sup>[1]</sup>

## Bacteria

### Typhoid Fever

This is a systemic disease transmitted by the ingestion of food or water contaminated with the faeces of an infected person, the aetiological agents is *Salmonella typhi*, and man is the reservoir. The clinical features are characterized by a slowly progressive fever as high as 40 °C, profuse sweating and gastroenteritis. Less commonly, a rash of flat, rose-colored spots may appear. Its occurrence is worldwide, and multi-drug resistant strains have been reported from Asia, Middle East and Latin America. Sanitation and hygiene are the critical measures that can be taken to prevent typhoid. Typhoid does not affect animals and therefore transmission is only from human to human. Typhoid can only spread in environments where human feces or urine are able to come into contact with food or drinking water. Careful food preparation and washing of hands are crucial to preventing typhoid.

### Salmonellosis

Aetiological agent is numerous serotypes of salmonella. In most countries which maintain salmonella surveillance. *S. Typhimurium* and *S. Enteritidis* are two most commonly reported. The reservoir is domestic and wild animals including poultry also humans ie patients, carriers. The mode of transmission is by ingestion of the organism in food derived from infected food animals or contaminated by faeces of infected animal or person. This includes raw and undercooked eggs and egg products, raw milk and raw milk products, meat and meat products, poultry and poultry products. Its occurrence is worldwide and more extensively reported in North America and Europe.

### Shigellosis

Aetiological agent is four species of genus shigella. *S. dysenteriae*, *S. flexneri*, *S. boydii*, *S. sonnei*, with man being the reservoir. These organisms invade the superficial colonic mucosa causing inflammation. Local multiplication and invasion is possible via a virulence factor, together with the production of a toxin. A cholera-like presentation may occur if the disease is due to *S. dysenteriae*, which produces a cytotoxin, Shiga toxin. Some 50% of cases occur in children less than 10 years old due to the fact that faecal-oral route is needed.

### Cholera

Cholera is an acute infectious disease caused by *Vibrio cholerae* bacteria which is endemic and epidemic in Asia. This bacteria has two biotypes, classic and El Tor. The latter has longer survival ability in nature and can cause sub-clinical cases. Its mode of transmission is by consumption of contaminated water and food, but rarely person to person spread has been reported. Undercooked or raw seafood has frequently been a source of cholera in some countries. Most infected people with *V. cholerae* tend to have mild-to-moderate symptoms which are diarrhoea and vomiting. However, if left untreated, cholera can be one of the most rapidly fatal infectious illnesses known. In endemic areas the incidence of cholera is highest in children.



Distribution of the cholera, yellow is sporadic.

### Campylobacteriosis

*Campylobacter jejuni* food poisoning is characterised by a prodromal malaise, abdominal pain, diarrhoea. Direct contact with infected animals or contaminated food or water is the transmission mode and animals are reservoirs. The bacteria multiply in the intestines and release endotoxins, with symptoms occurring after 2 to 5 days. It was the most common cause of gastroenteritis in England and Wales in 1991. Causes 5-14% of diarrhoea worldwide.

### Others

*Staphylococcal* food poisoning, *Clostridium perfringens* food poisoning, *Bacillus cereus* food poisoning and Botulism are also infecting gastrointestinal tract and through their toxins cause gastroenteritis.

# Viruses

## Rotaviral Enteritis

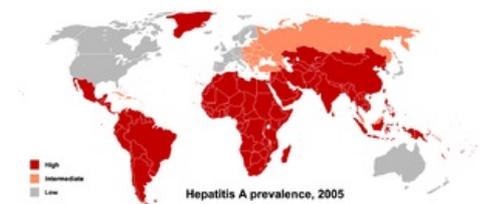
Rotavirus is the major cause of gastroenteritis that causes a severe diarrhoea and vomiting in children. This virus is transmitted by faecal oral route, with man being the reservoir. They do not multiply in foods but the lack of hygiene in food handlers and using dirty utensils are causes for their transfer. Usually the patient is less than one year old, rotavirus is only seen in the under fives and in the elderly.

## Norwalk Type Disease

Norwalk virus named after the city in Ohio where the first identified outbreak occurred. Virus is shed in vomitus and faeces. Transmission is via faecal-oral route via contaminated food, water and infected contacts. Reservoir is man.

## Viral Hepatitis A

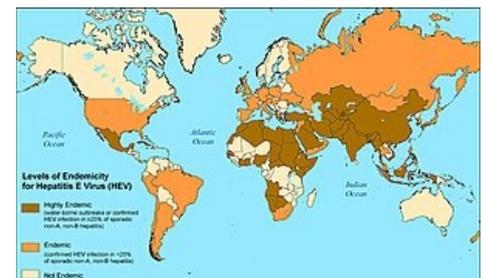
Hepatitis A virus hepatitis accounts for 20-25% of clinical hepatitis worldwide. It is due to a small, single stranded RNA picornavirus. HAV hepatitis may be referred to as infectious hepatitis. The reservoir is man. HAV is spread by the faeco-oral route. Parenteral spread may very rarely follow transfusion of blood from a donor who is in the incubation stage of the disease. Children of school age are most often affected. Adults are usually infected by spread from children. There are about 7000 cases of HAV per year in the UK, 15% of cases are associated with foreign travel of which 50% were associated with travel to the Indian subcontinent, 3% implicate food contamination most commonly shellfish. Epidemics may occur, usually associated with water or food contamination. Vaccination or passive immunisation with immune serum globulin is recommended for travellers to highly endemic areas and to close personal contacts of sufferers.



Hepatitis A prevalence in 2005.

## Hepatitis E

- Hepatitis E virus accounts for sporadic and major epidemics of viral hepatitis in developing countries, particularly, SE Asia, Nepal, Algeria, Japan, Siberia, Mongolia, and in traveller's returning from these areas. Transmission is by the faeco-oral route, usually by contaminated sewage water and the reservoir is man.



Hepatitis E in 2008.

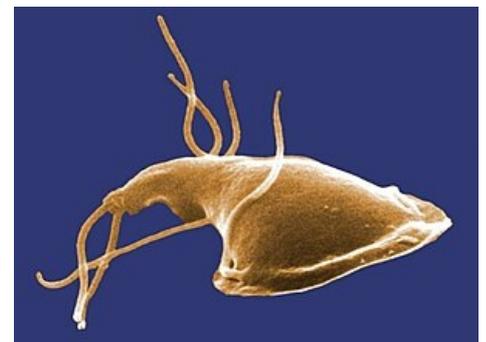
## Poliomyelitis

Poliomyelitis is an acute viral infectious illness affecting the central nervous system. This virus is transmitted by consuming contaminated food and water to the gastrointestinal tract and man is the reservoir. This virus replicates in the gut and has a high affinity for nervous tissue specifically infecting and destroying motor neurons, leading to muscle weakness and acute flaccid paralysis. In most cases this infection is clinically inapparent, or symptoms may range in severity from a fever to aseptic meningitis or even paralysis. Transmission is through contact with the faeces or pharyngeal secretions of an infected person.

 For more information see [Poliomyelitis](#).

## Parasites

Many parasites reside within the gastrointestinal tract in humans and other animals. Most helminths have complex life cycles having more than one host. The major route of transmission is through consumption of contaminated food (especially undercooked pork and beef in case of some helminths). The main groups of parasites include protozoans and parasitic worms (helminths). The protozoans, including *cryptosporidium*, *isospora*, *Giardia lamblia* and *Entamoeba histolytica*. *Taenia solium* and *Taenia saginata* invade the muscles and form cysts inside them, this condition is called cysticercosis and may cause neurological disorders. *E. histolytica* causes amoebiasis which is manifested by a range of symptoms from a mild diarrhoea to fulminant dysentery.



*Giardia lamblia*

## Links

### Related articles

- Airborne Infections

## External links

- Wikipedia (<http://en.wikipedia.org/wiki/>)
- Wikiskripta ([http://www.wikiskripta.eu/index.php/N%C3%A1kazy\\_pren%C3%A1%C5%A1an%C3%A9\\_aliment%C3%A1rnou\\_cestou](http://www.wikiskripta.eu/index.php/N%C3%A1kazy_pren%C3%A1%C5%A1an%C3%A9_aliment%C3%A1rnou_cestou))

## References

1. Wikipedia contributors. *Gastroenteritis* [online]. Wikipedia, The Free Encyclopedia., The last revision 17 January 2012 14:48 UTC, [cit. 19 January 2012 20:07 UTC]. <<http://en.wikipedia.org/w/index.php?title=Gastroenteritis&oldid=471870518>>.

## Bibliography

- BENCKO, Vladimír, et al. *Hygiene and epidemiology : Selected Chapters*. 2nd edition. Prague. 2008. ISBN 9788024607931.