

## Foodborne Pathogens and Illnesses

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### DESCRIPTION

Bacteria, viruses, parasites, and moulds are pathogenic microorganisms that cause food-borne illnesses or poisoning. It's vital to remember that pathogenic bacteria and viruses seldom cause food spoiling since their contamination isn't visible or detectable.

### Bacteria

***Campylobacter jejuni***: Is a prevalent cause of diarrhoea in both humans and certain animals. Direct contact between people and affected animals, as well as their waste, can spread the disease. It is most usually spread from person to person by the intake of contaminated food or drink. The symptoms can range from moderate diarrhoea to a severe invasive condition with stomach discomfort, fever, and blood and mucus in the stools.

***Non-typhi salmonellosis***: Salmonella species have over 2000 serotypes, however only a few cause Salmonella gastroenteritis in humans. Acute watery diarrhoea, nausea, cramping, and fever are among the symptoms. It's possible that pass blood in stool. The principal reservoir is animals, and transmission occurs by consumption of infected goods. Poultry, meat, eggs, and milk are among the foods most at danger.

***Salmonella typhi and paratyphi***: Typhoid and paratyphoid fevers are caused by these bacteria. Because humans are generally the reservoir for both of these bacteria, transmission happens mostly through person-to-person contact or food contamination by food.

***Staphylococcus aureus***: Humans are the cause of this virus. Smaller levels of germs are frequently discovered in the nose and on the skin of clinically healthy persons. Higher concentrations can be detected in infected eczema, psoriasis, or any other pus-draining skin disease. As a result, these individuals should not be handling food. Heat resistant staphylotoxin causes food poisoning in these bacteria, resulting in diarrhoea, vomiting, cramps, and fever. The symptoms occur out of nowhere and generally go away within 24 hours.

***Escherichia coli***: There are numerous serotypes, some of which are safe to humans but induce gastroenteritis in others. The most prevalent cause of traveler's diarrhoea is enterotoxigenic E.coli. Humans are the source, and transmission is mainly through contaminated food and drink.

***Listeria monocytogenes***: Because it is widespread and has the capacity to grow slowly even at low temperatures, this bacteria is closely connected with food stored for lengthy periods of time in the refrigerator. In vulnerable people, it can induce septicemia and meningitis, which can be lethal.

***Shigella***: Humans and primates are the source. Person-to-person contact is the primary method of transmission due to the low infectious dosage. It's also spreadable through contaminated food and water. Fever and watery diarrhoea are two signs of shigellosis. The infection can also cause a dysenteric syndrome, which involves fever, stomach pains, and tenesmus, as well as frequent, small-volume, bloody faces with mucus.

***Vibrio cholerae***: Humans are the cause of this virus. The major modes of transmission include contaminated water and food, as well as person-to-person transfer in congested, unsanitary environments. It produces acute watery diarrhoea with a daily output of up to 20 litres.

***Clostridium botulinum***: It comes from the intestines of fish, birds, and mammals. It's also found in abundance in nature. The bacterium is an anaerobe that produces spores and has an extremely strong heat labile toxin that damages the neurological system.

### Viruses

Viruses, unlike bacteria, are incapable of reproducing in food. Food handlers and the use of filthy utensils are the major modes of transmission, as the virus is transferred to food and then consumed by humans. The most common causes of gastroenteritis are rotaviruses and Norwalk virus. Asymptomatic carriers who handle food are the major source of viral hepatitis a outbreaks.

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