

A Brief Note on Food-Borne Pathogens and it's Causes and Symptoms

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Commentary

Received: 02-Feb-2022, Manuscript No. JFPDT-22-55236; **Editor assigned:** 04-Feb-2022, Pre QC No. JFPDT-22-55236 (PQ); **Reviewed:** 18-Feb-2022, QC No. JFPDT-22-55236; **Accepted:** 22-Feb-2022, Manuscript No. JFPDT-22-55236 (A); **Published:** 01-Mar-2022, DOI: 10.4172/2321-6204.10.1.001.

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DESCRIPTION

Foodborne pathogens (such as viruses, bacteria, and parasites) are biological agents that can cause food poisoning. A foodborne disease outbreak is defined as the emergence of two or more cases of the same illness caused by consuming a common food.

Foodborne illness is caused by consuming infected foods or beverages. Food can be contaminated by a variety of disease-causing germs or pathogens, resulting in a wide range of foodborne diseases. Bacteria, viruses, and parasites cause the vast majority of foodborne diseases.

Foodborne illness (also known as food poisoning) is any illness caused by pathogenic bacteria, viruses, or parasites that contaminate food, as well as prions (the agents of mad cow disease) and toxins such as aflatoxins in peanuts, poisonous mushrooms, and various species of beans that have not been boiled for at least 10 minutes.

Symptoms vary depending on the cause, but they usually include nausea, fever, and pains, as well as diarrhoea. Because even though infected food was removed from the stomach in the first bout, germs, such as bacteria (if

applicable), might travel from the stomach into the intestine and reproduce, bouts of vomiting can be repeated with a lengthy time in between. Some microorganisms are able to survive in the gut.

Symptoms for pollutants that need an incubation period might take hours to days to appear, depending on the source and the amount of food consumed. Longer incubation periods make it harder for sufferers to link their symptoms to the food they ate, leading them to misdiagnose their symptoms as gastroenteritis.

Causes

The most prevalent causes of foodborne illness are improper food handling, preparation, or storage. Cleanliness measures used before, during, and after food preparation can reduce the risk of illness. Hand washing is one of the most effective barriers against the spread of foodborne illness, according to the public health community. Food safety refers to the process of monitoring food to ensure that it does not cause foodborne illness.

A wide range of poisons that impact the environment can also induce foodborne sickness. Furthermore, a variety of chemicals, such as pesticides, pharmaceuticals, and natural harmful compounds, such as vomitoxin, deadly mushrooms, or reef fish, can induce foodborne sickness.

Enterotoxins

Some foodborne infections are caused by enterotoxins, in addition to sickness caused by direct bacterial infection (exotoxins targeting the intestines). Even if the bacteria that caused the enterotoxins have been eliminated, enterotoxins can cause sickness. Symptom onset varies per toxin, although it might be quick, as in the case of *Staphylococcus aureus* enterotoxins, which show symptoms in one to six hours.

Staphylococcal enterotoxins (most typically staphylococcal enterotoxin A, but also includes staphylococcal enterotoxin B) are the most regularly reported enterotoxins, while poisoning instances are likely underreported. Due to competition with other biota in raw foods, it is found mostly in cooked and processed foods, and people are the primary source of contamination since a significant percentage of humans are chronic carriers of *S. aureus*.

- *Clostridium botulinum*
- *Clostridium perfringens*
- *Bacillus cereus*

Botulism is an uncommon but potentially fatal condition caused by *Clostridium botulinum*, anaerobic bacteria that thrives in inadequately canned low-acid foods and generates botulin, a strong paralytic toxin.

Pseudoalteromonas tetraodonis, *Pseudomonas* and *Vibrio species*, and other bacteria create the fatal tetrodotoxin, which is found in the tissues of certain living animal species rather than being a breakdown result.