

Foodborne Illness

Common Foodborne illnesses



What is foodborne illness (disease, poisoning or infection)?

Foodborne illness (sometimes called "foodborne disease," "foodborne infection," or "food poisoning") is a common, costly yet preventable public health problem. Each year, 1 in 6 Americans get sick by consuming contaminated foods or beverages. Many different disease-causing microbes, or pathogens, can contaminate foods, so there are many different foodborne infections. In addition, poisonous chemicals, or other harmful substances can cause foodborne diseases if they are present in food.



These different diseases have many different symptoms, so there is *no one syndrome that is foodborne illness*. However, the microbe or toxin enters the body through the gastrointestinal tract and often causes the first symptoms there, so nausea, vomiting, abdominal cramps and diarrhea are common symptoms in many foodborne diseases.

Many microbes spread in *more than one way*, so we cannot always know that a disease is foodborne. The distinction matters, because public health authorities need to know how a particular disease is spreading to take the appropriate steps to stop it. For example, *Escherichia coli* O157:H7 infections can spread through contaminated food, contaminated drinking water, contaminated swimming water, and from toddler to toddler at a day care center. Depending on which means of spread caused a case, the measures to stop other cases from occurring could range from removing contaminated food from stores, chlorinating a swimming pool, or closing a child day care center.

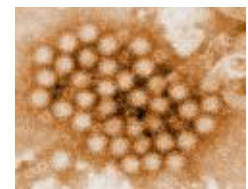
What are the most common foodborne diseases?

Campylobacter is a bacterial pathogen that causes fever, diarrhea, and abdominal cramps. It is the most commonly identified bacterial cause of diarrheal illness in the world. These bacteria live in the intestines of healthy birds, and most raw poultry meat has *Campylobacter* on it. Eating undercooked chicken or other food that has been contaminated with juices dripping from raw chicken is the most frequent source of this infection.



Clostridium perfringens (*C. perfringens*) is a spore-forming gram-positive bacterium that is found in many environmental sources as well as in the intestines of humans and animals. *C. perfringens* is commonly found on raw meat and poultry. It can survive in conditions with very little or no oxygen. *C. perfringens* produces a toxin that causes illness.

Norovirus (previously called Norwalk-like virus) is an extremely common cause of foodborne illness, though it is rarely diagnosed, because the laboratory test is not widely available. It causes an acute gastrointestinal illness, usually with more vomiting than diarrhea that generally resolves within three days. Unlike many foodborne pathogens that have animal reservoirs, norovirus spreads primarily from



one infected person to another, often through contaminated food, water, or environmental surfaces. Infected kitchen workers can contaminate a salad or sandwich as they prepare it, if they have the virus on their hands. Sewage discharges into coastal growing waters have contaminated oysters before they are harvested.

Salmonella is a bacterium that is widespread in the intestines of birds, reptiles and mammals. It can spread to humans via a variety of different foods of animal origin. The illness it causes, salmonellosis, typically includes fever, diarrhea and abdominal cramps. In persons with poor underlying health or weakened immune systems, it can invade the bloodstream and cause life-threatening infections



Shigella is actually a family of bacteria that can cause diarrhea in humans. They are microscopic living creatures that pass from person to person. Shigella was discovered over 100 years ago by a Japanese scientist named Shiga, for whom they are named. There are several different kinds of Shigella bacteria: Shigella sonnei, (also known as Group D) Shigella, accounts for over two-thirds of shigellosis in the United States. Shigella flexneri, (or Group B) Shigella accounts for almost all the rest.

Other types of Shigella are rare in this country, though they continue to be important causes of disease in the developing world. One type found in the developing world, Shigella dysenteriae (Type 1) can cause deadly epidemics.

Some common diseases are occasionally foodborne, even though they are usually transmitted by other routes. These include infections caused by Hepatitis A, and the parasites Giardia lamblia and Cryptosporidia. Even strep throats have been transmitted occasionally through food. In addition to disease caused by direct infection, some foodborne diseases are caused by the presence of a toxin in the food that was produced by a microbe in the food.

- For example, the bacterium Staphylococcus aureus can grow in some foods and produce a toxin that causes intense vomiting.
- The rare but deadly disease botulism occurs when the bacterium Clostridium botulinum grows and produces a powerful paralytic toxin in foods. These toxins can produce illness even if the microbes that produced them are no longer there.
- Other toxins and poisonous chemicals can cause foodborne illness. People can become ill if a pesticide is inadvertently added to a food, or if naturally poisonous substances are used to prepare a meal. Every year, people become ill after mistaking poisonous mushrooms for safe species, or after eating poisonous reef fishes.



For more sources of information on this topic visit:

ST. CLAIR COUNTY HEALTH DEPARTMENT www.scchealth.co

MICHIGAN DEPARTMENT AGRICULTURE AND RURAL DEVELOPMENT www.michigan.gov/mdard

CENTERS FOR DISEASE CONTROL AND PREVENTION www.cdc.gov

US DEPARTMENT OF AGRICULTURE www.usda.gov