

Foodborne Illness: Prevention and Response

It's important to take precautions in the workplace, at home, when eating out or traveling to prevent spreading or contracting a foodborne illness with potentially serious health consequences.

Exposure Risk

The Centers for Disease Control and Prevention (CDC) [food safety division](#) estimates 48 million cases of foodborne illness occur annually in the U.S., resulting in 128,000 hospitalizations and 3,000 deaths a year.

In 2016, the most recent reporting year, the CDC monitored between 21 and 57 potential food poisoning or related clusters a week. Investigations of more than 200 multi-state clusters led to recalls of a variety of foods including packaged salads, meat replacement products, frozen vegetables and flour.

Food can become contaminated during human handling, by water or chemicals, and during storage. Babies and young children, pregnant women, the elderly and people with weak immune systems are particularly susceptible to foodborne organisms.

Foodborne Illness Causes

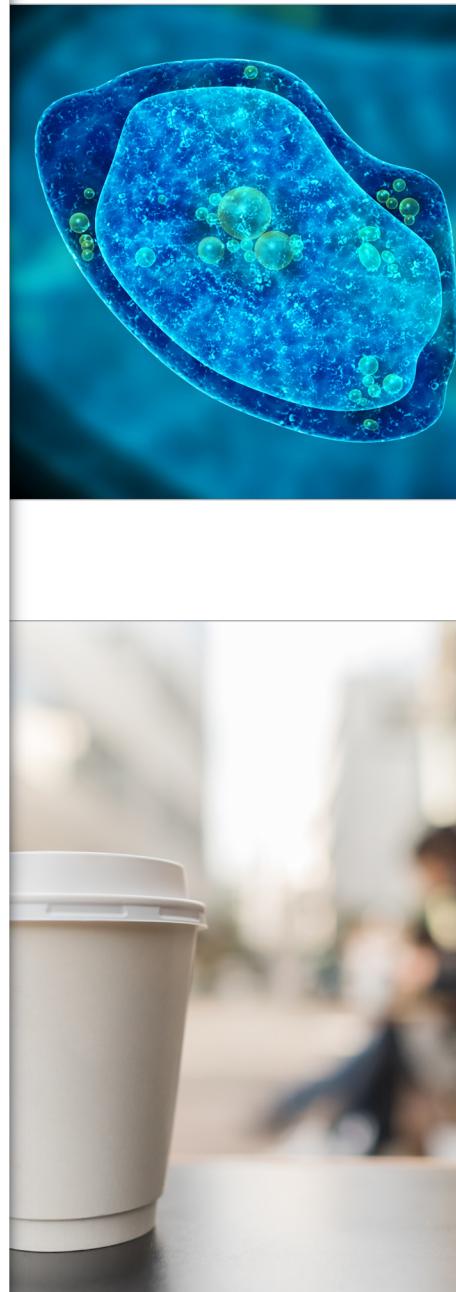
Bacteria may be present in foods such as fruit, raw meat, fish, shellfish, eggs, unpasteurized milk and other dairy products. Bacteria can grow in the intestines and create an infection. *Salmonella*, *Campylobacter*, *hemorrhagic E. coli* and *Listeria* are among types of bacteria that cause illness. Some bacteria produce toxins that may not alter the appearance, odor or flavor of food. Common kinds of bacteria that produce toxins include *Staphylococcus aureus* and *Clostridium botulinum*.

Viruses present in stool or vomit may cause illness. Viral threats include hepatitis A virus, which affects the liver; norovirus, the most common cause of acute gastroenteritis in the U.S.; and rotavirus, which is easily spread among children via fecal-oral contamination.

Parasites that can be transmitted by food include protozoa such as *Cryptosporidium* spp. and *Giardia intestinalis*, roundworms and tapeworms. Occasionally in the U.S., and more often in developing countries, roundworms, tapeworms and flukes may be contained in foods such as undercooked fish, crabs and mollusks; undercooked meat; raw aquatic plants such as watercress; and raw vegetables that have been contaminated by human or animal feces. Parasites can also be transmitted by water, soil or person-to-person contact.

According to the CDC, 31 pathogens are known to cause foodborne illness.

Infected food workers cause about 70 percent of reported norovirus outbreaks from contaminated food. Norovirus has gained notoriety for afflicting cruise ship passengers, but those cases account for only about 1 percent of all reported norovirus outbreaks. *Salmonella* is linked to the highest number of hospitalizations and deaths from foodborne illness.



Symptoms and Treatment

Most foodborne illnesses, while unpleasant, resolve by themselves. However, some pathogens can have serious, long-term health effects.

Symptoms may not appear for hours to days after consuming contaminated food. Common signs and symptoms of foodborne illness include vomiting, diarrhea, abdominal pain, dehydration, fever and chills. When a chemical is consumed, symptoms may include headache, tingling or numbness, blurred vision, weakness, dizziness, and in serious cases, paralysis. In rare cases, hemolytic uremic syndrome may occur when *E. coli* bacteria become lodged in the digestive tract and make toxins that enter the bloodstream.

An infection may be diagnosed using laboratory tests such as stool cultures.

Diarrhea or vomiting can cause dehydration if an individual loses more body fluids and salts (electrolytes) than he or she can retain. In such cases, it's important to replace lost fluids and electrolytes with an oral rehydration solution. Sports drinks are not considered adequate for the treatment of diarrheal illness.

If diarrhea and cramps occur, an antidiarrheal medication may provide symptomatic relief. However, health officials say these medications should be avoided if there is high fever or blood in the stool because they may make the illness worse.

Prevention

Protecting the public from foodborne illness requires robust compliance and food safety training programs, according to industry experts. In the food service industry, a critical first step is certifying kitchen managers and training workers in food safety practices.

Employees can help prevent the spread of foodborne illness by:

- Washing hands before and after handling food and during restroom breaks
- Keeping uncooked foods separate from each other during storage and handling
- Frequently washing utensils, other equipment and countertops, especially when changing from one type of food to another
- Rinsing raw fruits and vegetables in fresh water before preparation
- Not touching ready-to-eat foods with bare hands before serving
- Avoiding contact with food and people when ill
- Cooking food to proper temperatures, which kills most bacteria.
- Refrigerating food at 40°F as soon as possible after it's cooked

A good rule of thumb is: "When in doubt, throw it out."

A health care professional should be consulted for illness accompanied by:

- high fever
temperature over 101.5°F, measured orally
- blood in stool
- prolonged vomiting
- signs of dehydration
includes decreased urination, dry mouth/throat, dizziness
- diarrheal illness that lasts more than three days

