

Norovirus

Facts for Food Handlers

Norovirus—the “stomach bug”

Infection with norovirus causes gastroenteritis (inflammation of the stomach and intestines), which most commonly results in diarrhea, vomiting, nausea, and stomach cramping. Norovirus illness is sometimes referred to as “stomach flu,” but it is **not** related to the flu, which is a respiratory illness caused by the influenza virus.

You can be infected with norovirus more than once in your lifetime. One reason for this is that there are many different types of noroviruses, and being infected with one type does not always protect against infection from another type. In addition, protection acquired from natural infection is thought to last for only a year or less.

Food handlers can spread norovirus to others

Persons working with food who are sick with norovirus gastroenteritis are a particular risk to others because they handle the food and drink many other people will consume. The virus is very small and shed (discharged from the body through vomit or stool) in great numbers. Thus—without meaning to—a sick food handler can easily contaminate the food he or she is handling. Many of those eating the contaminated food may become ill, and an outbreak may result.

Outbreaks of norovirus gastroenteritis have taken place in nursing homes, hospitals, restaurants, cruise ships, schools, banquet halls, summer camps, and family dinners—in other words, places where people often consume water and/or food prepared or handled by others. It is estimated that more than half of all food-related outbreaks of illness are caused by norovirus. In many of these cases, sick food handlers were involved in the spread of the virus.

Norovirus spreads quickly and easily

Noroviruses are found in the vomit and stool (fecal matter) of infected persons from the day they begin to feel ill, and the virus continues to be present in the stool for 2 weeks or more after the infected person feels better. Infected persons are considered most contagious during the first 3 days of illness; it is unclear whether virus that is shed beyond 3 days is infectious.

People can become infected with the virus by

- Eating food or drinking liquids that are contaminated with norovirus,
- Touching surfaces or objects contaminated with norovirus, and then placing their hand in their mouth, and
- Having direct contact with another person who is infected and showing symptoms (for example, when caring for someone with illness, or sharing foods or eating utensils with someone who is ill).



National Center for Immunization and Respiratory Diseases
Division of Viral Diseases



Food and drinks can easily become contaminated with norovirus because the virus is very small and because it takes a very small amount (fewer than 100 norovirus particles) to make a person sick. Although the virus cannot multiply outside a human body, billions of norovirus particles are shed by infected people. These shed particles can cause illness if they get into food or water.

Food can be contaminated by

- Direct contact with contaminated hands
- Direct contact with work surfaces that are contaminated with infectious stool or vomit
- Tiny droplets of vomitus that spray through the air when an infected person vomits



Some foods can be contaminated with norovirus **before** being delivered to a restaurant or store. Several outbreaks have been caused by the consumption of oysters harvested from contaminated waters. Other food products, such as salads and fruit, can also be contaminated at their source. However, most norovirus contamination of food is thought to occur during preparation and service by food handlers who are infected with the virus.

Tips for preventing the spread of norovirus

The following practical tips should be followed to help prevent the spread of norovirus:

Do not prepare food while ill: Many local and state health departments require that food handlers and preparers with gastroenteritis not work until 2 or 3 days after they feel better. Food handlers who were recently sick can be given different duties in the restaurant (for example, working the cash register or as a host or hostess) so that they do not have to handle food.

Practice proper hand hygiene: Wash your hands carefully with soap and water, especially after using the toilet and before preparing or handling food. Noroviruses are found in the vomit and stool of infected people from the day they start to feel ill, and the virus continues to be present in the stool for as long as 2 to 3 weeks after an infected person feels better. Thus, continued care in washing hands is important in preventing the spread of this virus. Alcohol-based hand sanitizers (containing at least 62% ethanol) may be a helpful addition to hand washing, but they are not a substitute for washing with soap and water. For more information about hand hygiene, see “[Handwashing: Clean Hands Save Lives](http://www.cdc.gov/cleanhands/)” at <http://www.cdc.gov/cleanhands/>.

Take care in the kitchen: Food items that might have become contaminated with norovirus should be thrown out. Carefully wash fruits and vegetables, and cook oysters and other shellfish thoroughly before eating them. Oysters should be obtained from reputable sources, and appropriate documentation should be kept in case trace back is needed. Sick children and infants in diapers should be excluded from food preparation areas.

Clean and disinfect contaminated surfaces: After an episode of illness, such as vomiting or diarrhea, immediately clean, disinfect, and rinse contaminated surfaces. Use a chlorine bleach solution with a concentration of 1000–5000 ppm (5–25 tablespoons of household bleach [5.25%] per gallon of water) or other disinfectant registered as effective against norovirus by the Environmental Protection Agency (see http://www.epa.gov/oppad001/list_g_norovirus.pdf [84 KB/11 pages]).

NOTE: Evidence for efficacy of a cleaning agent against norovirus is usually based on studies using feline calicivirus (FCV)—a virus related to norovirus—as a surrogate. However, FCV and norovirus exhibit different physiochemical properties; thus, it is unclear whether inactivation of FCV by a specific cleaning agent reflects efficacy of such solutions against norovirus.

Wash laundry thoroughly: Linens (towels, tablecloths, napkins) and clothing that are soiled to any extent with vomit or stool should be handled carefully—without agitating the item—to avoid spreading virus. The items should be laundered with detergent at the maximum available cycle length and then machine dried.

More information about norovirus

Additional information about noroviruses and norovirus infection is available on CDC’s [Norovirus](http://www.cdc.gov/ncidod/dvrd/revb/gastro/norovirus.htm) website (<http://www.cdc.gov/ncidod/dvrd/revb/gastro/norovirus.htm>).