



FACT SHEET

Norovirus

Noroviruses are a group of related viruses that cause acute gastroenteritis in humans.

Symptoms: Norovirus infection usually presents as acute-onset of vomiting, watery non-bloody diarrhea with abdominal cramps, and nausea. Low-grade fever also occasionally occurs, and vomiting is more common in children. Dehydration is the most common complication, especially among the young and elderly, and may require medical attention. Symptoms usually last about 24 to 60 hours. Recovery is usually complete and there is no evidence of any serious long-term problems.

Spread: Noroviruses are transmitted primarily through the fecal-oral route, either by consumption of fecally contaminated food or water or by direct person-to-person spread. Environmental sources and objects capable of being contaminated may also act as a source of infection. Good evidence exists for transmission due to aerosolization of vomitus that presumably results in droplets contaminating surfaces or entering the oral mucosa and being swallowed. No evidence suggests that infection occurs through the respiratory system.

Noroviruses are highly contagious, and it is thought that an as few as 10 viral particles may be sufficient to infect an individual. During outbreaks of norovirus gastroenteritis, several modes of transmission have been documented; for example, initial foodborne transmission in a restaurant, followed by secondary person-to-person transmission to household contacts. Although presymptomatic viral shedding may occur, shedding usually begins with onset of symptoms and may continue for 2 weeks after recovery. It is unclear to what extent viral shedding over 72 hours after recovery signifies continued infectivity.

Incubation: The incubation period for norovirus-associated gastroenteritis in humans is usually between 24 and 48 hours (median in outbreaks 33 to 36 hours), but cases can occur within 12 hours of exposure. Studies with volunteers given stool filtrates have shown that asymptomatic infection may occur in as many as 30% of infections, although the role of asymptomatic infection in norovirus transmission is not well understood.

Contagious Period: During acute stage of disease and up to 48 hours after Norwalk diarrhea stops.

Diagnosis and Treatment: Laboratory use of reverse transcriptase polymerase chain reaction (RT-PCR). RT-PCR can be used to test stool and emesis samples, as well as to detect the presence of noroviruses on environmental swabs in special studies.

No specific therapy exists for viral gastroenteritis. Symptomatic therapy consists of replacing fluid losses and correcting electrolyte disturbances through oral and intravenous fluid administration.

Prevention:

Prevention of foodborne norovirus disease is based on the provision of safe food and water. Noroviruses are relatively resistant to environmental challenge: they are able to survive freezing, temperatures as high as 60°C, and have even been associated with illness after being steamed in shellfish. Moreover, noroviruses can survive in up to 10 ppm chlorine, well in excess of levels routinely present in public water systems. Despite these features, it is likely that relatively simple measures, such as correct handling of cold foods, frequent hand washing, and paid sick leave, may substantially reduce foodborne transmission of noroviruses.