

# Rotavirus Fact Sheet

Gastroenteritis can be caused by a variety of different pathogens. The season, a person's age and overall health all play a role in determining a person's susceptibility to a particular pathogen. For infants and children, rotavirus is of particular concern; it can strike without warning with potentially life-threatening consequences.

## General Information

### *Virology*

Rotavirus and related serotypes are a part of the *Reoviridae* family of viruses. It is non-enveloped and contains 11 double-stranded RNA segments covered by a triple layered protein capsid. The capsid is in an icosahedral formation composed of proteins that are responsible for virulence, neutralization, cell attachment and penetration among other functions. Rotaviruses are known to infect both humans and animals; however, Rotavirus A is most commonly responsible for infection in humans. Rotavirus is very stable in the environment

### *Clinical manifestations*

Rotavirus invades the epithelial cells of the small intestines. Symptoms are typical of other gastrointestinal infections which include: fever, vomiting, (explosive, watery) diarrhea and stomach cramping. Symptoms last 4-7 days but are self-limiting and usually require no treatment; however, diarrhea can lead severe dehydration hospitalization may be required.

### *Epidemiology of transmission*

Infected persons will shed large amounts of Rotavirus in their stool. In the absence of good hygiene, many environmental surfaces can be contaminated, including toys. Rotavirus is transmitted via the fecal to oral route, is very contagious and is easily spread among children. Individuals who are symptomatic should refrain from preparing food and limit contact with others.

### *Basic Prevention*

As with all highly contagious pathogens hand washing is extremely important. When in close contact or caring for a sick individual, implement hand hygiene before, after and prior to the preparation of food. Rotavirus is very stable in the environment surviving up to 60 days on inanimate objects; therefore diligent cleaning and disinfection of contaminated and surrounding surfaces with a hospital grade disinfectant or equivalent (in non-healthcare environment) is recommended. For infants, there is a vaccine available that can prevent or limit the severity of infection.



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## Infection Prevention and Control Measures

### *Healthcare Prevention Measures*

In addition to Routine / Standard Precautions Contact Precautions should be implemented with patients who are suspected or confirmed to have Rotavirus infection.

- Patients with suspected or confirmed Rotavirus may be placed in private rooms or cohort with other patients with the same infection.
- Follow hand-hygiene guidelines by either carefully washing hands with soap and water or using Alcohol-Based Hand Sanitizers (ABHS) after contact
- Use gloves when in contact with, or caring for patients and for all interactions that may involve contact with the patient or potentially contaminated areas in the surrounding environment

### *Environmental control measures*

Products used for disinfection of Rotavirus must have an appropriate non-enveloped claim as they are more difficult to eradicate from the environment. All horizontal and frequently touched surfaces should be cleaned daily and when soiled. All patient care equipment (e.g., thermometers, blood pressure cuff, pulse oximeter, etc.) should be dedicated to the use of one patient. All patient care equipment should be cleaned and disinfected as per Routine / Standard Practices before reuse with another patient or a single use device should be used and discarded in a waste receptacle after use. Toys, electronic games or personal effects should not be shared by patients. Rotavirus is highly contagious and proper protocol is necessary to avoid transmission.

## References:

1. Pathogen Safety Data Sheet- Infectious Diseases: Human Rotavirus. <http://www.phac-aspc.gc.ca/lab-bio/res/psds-ftss/rotavirus-eng.php>
2. Shaw, R., Hempson, S., Mackow, E. (1995). Rotavirus diarrhea is caused by nonreplicating viral particles, Journal of Virology, Vol.69, p. 5946-5950. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC189489/pdf/695946.pdf>
3. CDC-Pinkbook: Rotavirus Chapter- Epidemiology and Prevention of Vaccine-Preventable Diseases. (May 2012). Retrieved from <http://www.cdc.gov/vaccines/pubs/pinkbook/rota.html>

