



# St. Vincent Physician Network

## Virus is Major Cause of Diarrhea in Kids

from [www.kidsgrowth.com](http://www.kidsgrowth.com)

Infectious diseases are a major source of sickness in infants and children, and most of these illnesses are caused by viruses. Although respiratory viruses get most of our attention, a viral infection of the gastrointestinal (digestive) tract is the major cause of diarrhea in children. Approximately 3.5 million cases of infectious diarrhea occur each year, and in children ages six months to three years, most are caused by the rotavirus.

The impact of this viral infection is significant, with about 125 deaths in the United States each year. Over 500,000 children visited a physician and 70,000 of these were hospitalized for dehydration annually after catching the rotaviral "bug." Rotavirus infections in young children usually produce fever and vomiting, followed by watery diarrhea. Symptoms usually last about five to seven days. The incubation period for rotavirus ranges from one to three days.

It is nearly impossible for a child attending daycare or preschool to avoid becoming infected with this microorganism. Since the rotavirus is excreted one to two days before the vomiting and diarrhea begins, it takes only twenty minutes for a child without symptoms to infect half the children in the daycare. Furthermore, the virus is so strong that a stool specimen containing the rotavirus can be diluted one billion times and still be infectious. In a recent study, researchers checked the floors, toys, and diaper changing areas of fifty clean day care centers. They found the virus on the surface of 56 percent of toilet handles, 44 percent of toy balls, 36 percent of diaper-changing areas, and 16 percent of drinking fountains! The virus can survive on plastic, glass, and steel surfaces for more than ten days. Since young children touch everything and are always putting their fingers in their mouths, protecting a young child from this virus is nearly impossible. The most effective way to reduce the spread of rotavirus from one child to another is through proper infection control. Good handwashing by everyone is perhaps the most effective prevention. Children should wash their hands after using the bathroom and especially before eating. Caretakers should wash their hands after each diaper change, and the changing area should be disinfected each time it is used.

The illness usually begins with an occasional bout of loose runny stools, and quickly progresses to frequent, watery bowel movements. Abdominal cramping, fever, and chills are also associated with this disease. The diagnosis can be confirmed in a laboratory by performing a rapid test for the rotavirus on a stool sample. The illness usually lasts five to seven days.

The possibility of dehydration (*a medical emergency*) increases when vomiting accompanies the diarrhea. A child with a rotavirus infection is not likely to develop dehydration as long as they can still drink. The signs of this medical emergency include:

- absence of saliva in the mouth
- sunken eyes
- markedly sunken fontanelle ("soft spot") in an infant

- no wet diapers or signs of urination for several hours
- loss of normal skin elasticity
- children usually become lethargic and drowsy whenever dehydration becomes a problem
- tearless crying

Parents should remember that dehydration can develop any time during the illness.

The child may transmit the virus to others as long as the diarrhea continues. Scrupulous attention to cleaning techniques should be kept up for some time, however, since infected children may shed the virus in the stools for up to one to two weeks.

The objective of treatment is to replace fluids and electrolytes (salts and minerals) lost by the diarrhea until the child clears the infection on their own. Rotavirus infection, like all viral conditions, is not treatable with antibiotics. The best therapy is the intake of clear fluids containing sufficient carbohydrates and electrolytes as directed by the child's physician. These fluids, known as rehydration solutions, have proven extremely effective in restoring normal body fluid balance when diarrhea is present. This approach requires a parent's full attention since the fluids must be given slowly and in small amounts. Infants and children with diarrhea are generally not given anti-diarrheal medication (such as kapectate and pepto-bismol) as they may prolong the infectious process. Children with diarrhea who are unable to take fluids by mouth because of vomiting may need intravenous fluids.

While the vast majority of children with rotavirus diarrhea make an uneventful recovery, that some children become very sick with the disease has prompted health authorities to work on a vaccine. This oral vaccine is currently being studied for effectiveness and safety, and may soon be available. For the time being, *rotavirus* control continues to rely on good hand-washing and disinfection of contaminated surfaces, and the isolation of symptomatic children.

Diarrhea in adults is often a nuisance but not deadly. However, the opposite is true in children. Parents can reduce their children's risk of getting a potentially very dangerous illness by maintaining strict hygienic practices at home and insisting on them at their child's day care center.