

Fact Sheet

What causes rotavirus disease?

Rotavirus disease is caused by a virus, the rotavirus. The name rotavirus is derived from the Latin *rota*, meaning “wheel,” because the rotavirus has a wheel-like appearance when viewed by an electron microscope.

How does rotavirus spread?

The rotavirus enters the body through the mouth and then infects the lining of the intestines. Rotavirus is very contagious, spreading easily from children who are already infected to other children and sometimes adults. Large amounts of rotavirus are shed in the stool of infected persons and the virus can be easily spread via contaminated hands and objects, such as toys. Children can spread rotavirus both before and after they become sick with diarrhea.

Rotavirus is very stable and may remain viable in the environment for months if not disinfected.

How long does it take to show signs of rotavirus after being exposed?

The incubation period for rotavirus diarrhea is 1-3 days. Symptoms of infection vary and depend on whether it is the first infection or reinfection.

What are the symptoms of rotavirus?

Rotavirus disease usually starts with fever, an upset stomach, and vomiting, followed by diarrhea. Children who have rotavirus disease develop vomiting and watery diarrhea that may last from three to eight days. They may lose interest in eating and drinking and become dehydrated from loss of fluids.

How serious is rotavirus?

All three symptoms of rotavirus disease (fever, vomiting, and diarrhea) cause children to lose fluids. Vomiting is especially dangerous because it's difficult to replace fluids in children who are vomiting persistently.

Each year in the United States rotavirus is responsible for more than 400,000 doctor visits, more than 200,000 emergency room visits, 55,000-70,000 hospitalizations, and 20-60 deaths.

Rotavirus infection is even more problematic in the developing world because children with rotavirus disease are less likely to receive the medical intervention necessary to prevent death from dehydration. In developing countries, rotavirus causes approximately 600,000 deaths each year in children younger than age five years.

What are possible complications from rotavirus?

Rotavirus infection in infants and young children can lead to severe diarrhea, dehydration, electrolyte imbalance, and metabolic acidosis. Immunodeficient children may have more severe or persistent disease.

Rotavirus accounts for 40%-50% of diarrhea-related hospitalizations. Despite efforts to improve the management of childhood rotavirus-associated diarrhea, hospitalizations of children in the U.S. with the disease have not significantly declined in the past two

decades. Hospitalizations are the most severe and costly outcome of rotavirus disease in U.S. children.

How do I know if my child has rotavirus?

Rotavirus disease is difficult to differentiate from illness caused by other pathogens. As a result, laboratory testing of the stool is needed to confirm a diarrheal illness as rotavirus.

Are children more likely to become infected at certain times of the year?

In the United States, rotavirus is a winter disease (children are most likely to get infected between November and May). In tropical climates, the disease occurs year round.

Is there a treatment for rotavirus?

Children are typically treated by replacing lost body fluids through drinking products that contain water with sugar and minerals. In severe cases, body fluids are replaced with fluids given directly through the veins using an intravenous line in the hospital.

How long is a person with rotavirus contagious?

Infected persons shed large quantities of virus in their stool beginning 2 days before the onset of diarrhea and for up to 10 days after onset of symptoms. Rotavirus may be detected in the stool of persons with immune deficiency for more than 30 days after infection.

Are any people at greater risk than others of being infected with rotavirus?

Groups at increased risk for rotavirus infection are those with increased exposure to virus. This includes children who attend childcare centers, children in hospital wards, caretakers and parents of children in childcare or hospitals, and children and adults with immunodeficiency-related diseases.

How common is rotavirus in the United States?

Very common! Every year in the United States, rotavirus causes illness in 2.7 million children.

Can you get rotavirus more than once?

A person may develop rotavirus disease more than once because there are many different rotavirus types, but second infections tend to be less severe than the original infections. After a single natural infection, 40% of children are protected against any subsequent rotavirus infection. Recurrent rotavirus infections affect persons of all ages.

Wouldn't good hygiene be enough to prevent rotavirus disease?

Better hygiene and sanitation have not been very effective in reducing rotavirus disease. This is illustrated by the fact that virtually everyone in the world is infected by rotavirus disease by age five years, despite differences in sanitation between countries.

When did a rotavirus vaccine become available?

A vaccine to prevent rotavirus gastroenteritis was first licensed in August 1998 but was withdrawn in 1999 because of its association with intussusception (intestinal blockage).

In February 2006, the Food and Drug Administration approved a new rotavirus vaccine, RotaTeq.

What kind of vaccine is it?

RotaTeq is a live vaccine. It is a combination between a cow rotavirus and human rotavirus. The vaccine contains five different rotavirus strains.

How is this vaccine given?

The RotaTeq vaccine is a liquid given by mouth.

Who should get this vaccine?

The Advisory Committee on Immunization Practices (ACIP) recommends routine vaccination of all infants with three doses of rotavirus vaccine.

What is the recommended schedule for getting this vaccine?

Children should get 3 doses of rotavirus vaccine, at age 2 months, age 4 months, and age 6 months. The first dose should be given between age 6-12 weeks and the two additional doses are given at 4-10 week intervals. Children should get all three doses by age 32 weeks.

Rotavirus vaccine may be given at the same time as other childhood vaccines.

Should an infant who has already been infected with rotavirus still be vaccinated?

Infants who have recovered from a rotavirus infection may not be immune to all five serotypes present in the vaccine. These infants should complete the three-dose series if they can do so by age 32 weeks.

How safe is this vaccine?

Clinical trials to determine the safety and effectiveness of this vaccine involved more than 70,000 infants age 6-12 weeks in 11 countries. There was not a clinically significant difference in the incidence of vomiting, diarrhea, fever, irritability, or poor feeding in children who got the vaccine versus those who didn't.

Because of the association of the earlier rotavirus vaccine with intestinal blockage, a study designed specifically to assess a risk of intussusception was conducted before licensure of RotaTeq. The vaccine was given to 35,000 children and another 35,000 were given a placebo (salt water). There was no difference in the incidence of intestinal blockage between the two groups.

In addition, the safety of this vaccine is being monitored after licensure (as with all vaccines) by FDA and by CDC through the Vaccine Adverse Event Reporting System. In addition, the manufacturer, Merck and Co., Inc., has committed to conducting another study of approximately 44,000 children, and CDC will also conduct a large study in its Vaccine Safety Datalink Program, which evaluates vaccine safety among approximately 80,000 U.S. infants every year. Also, for the first three years of licensure, the manufacturer will report cases of intussusception to FDA within 15 days of receiving them, and all other serious side effects on a monthly basis.

As a result of this aggressive monitoring, on February 13, 2007, the FDA released a report on the number of intussusception cases reported since RotaTeq licensure. The number reported fell within what was expected and gives assurance that the vaccine does not pose an elevated risk for intussusception. To read the report, go to: <http://www.fda.gov/cber/safety/phnrota021307.htm> To read a CDC Q&A about the report, go to: <http://www.cdc.gov/od/science/iso/concerns/rotavirus.htm>

How effective is this vaccine?

Rotavirus vaccine is very effective against rotavirus disease. Studies indicate the vaccine will prevent about 74% of all rotavirus cases, about 98% of severe cases, and about 96% of hospitalizations due to rotavirus. The vaccine will not prevent diarrhea or vomiting caused by other viruses.

What side effects have been reported with this vaccine?

Children are slightly (1%-3%) more likely to have mild, temporary diarrhea or vomiting within 7 days after getting a dose of vaccine than children who did not get the vaccine.

Moderate or severe reactions have not been associated with this vaccine.

Who should NOT receive rotavirus vaccine?

Any child who has had a severe (life-threatening) allergic reaction to a dose of rotavirus vaccine should not get another dose.

A child with a severe (life-threatening) allergy to any component of rotavirus vaccine should not get the vaccine.

Although this vaccine has not been associated with intussusception, as a precaution it is suggested that children who have had intussusception should not get rotavirus vaccine as they are at a higher risk for getting intussusception again.

Children who are moderately or severely ill at the time the vaccination is scheduled should probably wait until they recover. This includes children who have diarrhea or vomiting.

Check with your healthcare provider if your child has any ongoing digestive problems; if your child's immune system is weakened because of HIV/AIDS or another disease that affects the immune system; if your child is receiving treatment with drugs such as long-term steroids or treatment for cancer; or if your child has recently had a blood transfusion or received any other blood product.

Can the vaccine cause rotavirus?

No. The vaccine contains attenuated viruses that are reassorted and do not exist in nature. The vaccine may cause mild symptoms similar to those experienced during rotavirus infection but cannot cause rotavirus disease.

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Adapted from <http://www.immunize.org/catg.d/p4217.pdf> on 6/6/2008. We thank the [Immunization Action Coalition](#)

This fact sheet is for information only and is not meant to be used for self-diagnosis or as a substitute for consultation with a health care provider. If you have any questions about the disease described above or think that you may have this infection, consult a health care provider.

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