

Before a rotavirus vaccine was available, each year in the United States almost 3 million children experienced high fevers, persistent vomiting and diarrhea as a result of rotavirus infections. These illnesses occurred during the winter in the United States and led to hundreds of thousands of doctor visits, tens of thousands of hospitalizations, and a small number of deaths. In other parts of the world where vaccines and medical access are limited, rotavirus still claims the lives of more than 1,000 children every day.

*Q. What is rotavirus?*

**A. Rotavirus is a virus that infects the lining of the intestines.** Typically, the virus infects children between 6 and 24 months of age. In temperate climates, such as the United States, rotavirus is a winter disease. In tropical climates, the disease occurs year-round.

*Q. What is my child's risk of getting infected with rotavirus?*

**A. Almost everyone in the world is infected with rotavirus by 5 years of age.** Before the vaccine, every year in the United States, rotavirus caused illness in 2.7 million children. The virus also caused 500,000 doctor visits, 55,000 to 70,000 hospitalizations and 20 to 60 deaths. About one of every 65 children born in the U.S. was hospitalized with dehydration caused by rotavirus. Since the rotavirus vaccine became widely used, at least 50 percent fewer children have suffered from rotavirus. Throughout the world, rotavirus kills about 500,000 infants and young children every year, more than any other single infectious disease. About 1,400 children die every day from rotavirus.

*Q. What is the harm of infection with rotavirus?*

**A. Rotavirus causes three significant symptoms: high fever, vomiting and diarrhea.** All three symptoms cause children to lose fluids. But none is more troublesome than vomiting. Vomiting caused by rotavirus can be frequent, persistent and severe. Also, it's very difficult to replace fluids and minerals in children who are vomiting. For this reason, no intestinal virus causes children to be dehydrated as quickly or as severely as rotavirus.

*Q. Why do so many children in the developing world die from rotavirus?*

**A. Most people think rotavirus infections are more severe in developing countries, but they're not.** About one of every five first-time rotavirus infections is moderate to severe, both in developed and developing countries. But countries with a high level of medical care are more likely to provide the lifesaving, supportive treatment children with rotavirus need. This difference is illustrated by a true story:



A 2-year-old girl wakes up with high fever and vomiting. The mother calls a nurse who instructs her to give the child frequent sips of Pedialyte®, but the child simply can't hold anything down. By the next morning, the mother is concerned about dehydration and takes the child to the doctor's office, where her fears are confirmed. The doctor examines the child and finds that when she cries she doesn't make tears and that she hasn't urinated in 10 hours; he tells the mother that her child is severely dehydrated and calls an ambulance. By the time the child arrives at the hospital, she is listless. Doctors in the emergency department try to give her intravenous fluids but, because she is so dehydrated, they can't find a vein in her arms or legs. The doctors call in a surgeon to put an intravenous line into her neck, allowing them to give the child much-needed fluids and saving her life.

In countries with limited medical resources, this child would have died from dehydration.

# Rotavirus: What you should know

## *Q. Is there a vaccine to prevent rotavirus?*

**A. Yes. Two vaccines are available.** Both vaccines are given orally. The first became available in 2006 and is a combination between a cow rotavirus and human rotaviruses. The second, available in 2008, contains a weakened human rotavirus.

## *Q. Who should get the rotavirus vaccine?*

**A. The rotavirus vaccine is given by mouth to children at either 2 and 4 months of age or at 2, 4 and 6 months of age, depending upon which vaccine is used.**

## *Q. Is the rotavirus vaccine safe?*

**A. Yes.** Rotavirus vaccines have been given to millions of babies without consequence. However, in a very small number of infants (approximately 1 in 100,000) a condition called intussusception may occur. Intussusception is a type of intestinal blockage that may require surgery. Because the chance of being hospitalized with a rotavirus infection is much greater (approximately 1 in 65), the benefits of receiving the vaccine are far greater than the risks.

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## *Q. Does the rotavirus vaccine work?*

**A. Yes.** About 98 of every 100 children who receive the rotavirus vaccine are protected against severe rotavirus disease. In clinical trials, none of the children who got the vaccine were hospitalized for rotavirus and there was a 96 percent decrease in doctor visits due to rotavirus.

Since the vaccine has become available, the United States has seen about half as many cases of rotavirus in young children as well as a decrease in hospitalization for dehydration caused by this disease.

This information is provided by the Vaccine Education Center at The Children's Hospital of Philadelphia. The Center is an educational resource for parents and healthcare professionals and is composed of scientists, physicians, mothers and fathers who are devoted to the study and prevention of infectious diseases. The Vaccine Education Center is funded by endowed chairs from The Children's Hospital of Philadelphia. The Center does not receive support from pharmaceutical companies.

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