



In February 2006, the Centers for Disease Control and Prevention recommended a new vaccine for infants to protect against rotavirus.

Rotavirus causes high fever, persistent vomiting and diarrhea in young children, typically during the winter in the United States.

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. Every year in the United States, rotavirus causes illness in 2.7 million children. The virus also causes 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. will be hospitalized with dehydration caused by rotavirus.

Throughout the world, rotavirus kills about 600,000 infants and young children every year, more than any other single infectious disease. About 2,000 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.

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Rotavirus: What you should know

Q. Is there a vaccine to prevent rotavirus?

A. Yes. A vaccine to prevent rotavirus became available in 2006. The rotavirus vaccine is a combination between a cow rotavirus and human rotaviruses.

Different strains of rotaviruses infect all mammals. In animals, as in people, it is the very young who are susceptible. Rotaviruses from one species are very good at causing disease in members of the same species but not in other species. So cow rotaviruses infect calves but not infants, and human rotaviruses infect infants but not calves. This idea of “species specificity” was used to make a rotavirus vaccine.

The rotavirus vaccine contains five different rotavirus strains. Each strain is made mostly from cow rotavirus proteins, but each strain also contains one human rotavirus protein. This combination represents the best of both worlds: On the one hand, cow rotavirus doesn't cause disease in people. On the other hand, the human rotavirus proteins provide protection against disease.

Q. Who should get the rotavirus vaccine?

A. The rotavirus vaccine is given by mouth to children in three separate doses at about 2, 4 and 6 months of age.

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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 and Kohl's Department Stores. The Center does not receive support from pharmaceutical companies.

Q. Is the rotavirus vaccine safe?



A. Yes. The rotavirus vaccine has been tested in more than 70,000 infants in the United States as well as in 10 other 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 compared with those who didn't receive it.

A different rotavirus vaccine given in the U.S. between 1998 and 1999 caused a rare form of intestinal blockage. That particular vaccine was made using a monkey strain of rotavirus, not a cow strain, and is no longer available in the United States.

To determine whether the current rotavirus vaccine caused intestinal blockage, it was given to about 35,000 children; another 35,000 children were given only salt water for comparison. There was no difference in the incidence of intestinal blockage between the two groups of children.

Q. Does the rotavirus vaccine work?

A. Yes. Ninety-eight percent of children who received the rotavirus vaccine were protected against severe rotavirus disease. That means that if a child receives the rotavirus vaccine, his chance of getting severely infected with rotavirus will be reduced by 98 percent. The vaccine also caused a 96 percent decrease in hospitalizations and an 86 percent decrease in doctor visits due to rotavirus.



Vaccine Education Center at
The Children's Hospital of Philadelphia

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