

## “So Many Treatments”: A True Story

“Pneumococcal disease attacked our family with such force that we nearly lost our twin boys,” says Andrea, the boys’ mother.

The twins, Peter and Andy, received the pneumococcal vaccine, PCV7, when they were infants in 2000. Unfortunately, PCV7, which protects against seven common types of pneumococcal bacteria, did not protect against the specific type that made the boys sick. Today’s pneumococcal vaccine, PCV13, covers 13 types of pneumococcal bacteria, including the type that caused the twins’ illness.

The family’s fight against pneumococcal disease began in the fall 2003. Andy and Peter were 3 years old, when they became sick. Andy developed a high fever and also had a seizure. He was rushed to the hospital by ambulance. Doctors said both boys had flu symptoms and prescribed fluids, rest, and over-the-counter medicine to treat the fever.

When Andrea noticed that Andy’s skin had a yellow tinge, the family rushed the boys back to the hospital. Doctors diagnosed pneumococcal disease which can cause pneumonia (infection of the lung) and damage organs throughout the body. Both boys had pneumonia and empyema (a severe lung complication of pneumonia). Andy had hemolytic uremic syndrome (a severe kidney and blood problem). Both boys were admitted to the hospital and had tubes put into their chests to drain fluid from around their lungs.

Andy’s case became more serious as the infection attacked several organs. He was placed in the intensive care unit (ICU) and put on life support. Andrea explains, “Seeing Andy on life support and dialysis to help his kidneys function was our worst nightmare. We weren’t sure if he was going to make it.”

Fortunately, the treatments Andy received worked, and he was taken off life support after 4 days. After almost 3 weeks, the boys went home from the hospital. The twins still had a long recovery. Andrea explains, “Andy was so sick and didn’t talk for so long. Peter needed physical therapy to help him walk. It was so sad to see them regress because of a vaccine-preventable disease.”

The twins eventually made a full recovery, but family life was impacted for months. Andrea recalls, “We were very careful with them for a long time, to protect their health, and even delayed pre-school enrollment.”

Andrea says, “I feel so lucky that my boys are still here with us today. I encourage every parent to get the pneumococcal vaccine for their children.”

## Pneumococcal Disease

You’ve probably heard of pneumonia, which is an infection of the lungs. Pneumonia can be caused by many different bacteria, viruses, and even fungi. One of the most common causes is the bacteria pneumococcus [pronounced “NEW mo ka kus”]. This bacterium is also one of the most common causes of severe pneumonia.

Besides causing pneumonia, this bacteria can cause other types of infections too, such as ear infections, sinus infections, meningitis (infection of the covering around the brain and spinal cord), and bacteremia (blood stream infection).

## Pneumococcal Disease Is Often Serious

The general name for infection with pneumococcus is pneumococcal disease. “Each year in the United States, nearly 160,000 children younger than 5 years old go to the doctor or are admitted to the hospital with pneumococcal pneumonia,” according to Dr. Matthew Moore of the Centers for Disease Control and Prevention (CDC). More than 4,000 children have the most serious type of infection, called invasive pneumococcal disease.

“Invasive disease means that germs invade parts of the body—like the brain or blood—that are normally free from germs,” explains Dr. Moore. When this happens, disease can be very severe.

Meningitis is the most severe type of invasive pneumococcal disease. Of children younger than 5 years old who get pneumococcal meningitis, roughly 1 out of 10 dies of the infection and others may have long-term problems such as hearing loss or developmental delay.

Bacteremia is also a type of invasive pneumococcal disease. About 1 out of 100 children with this blood stream infection dies of it.

Sinus and ear infections are usually mild and are much more common than the more severe forms of pneumococcal disease. However, some children develop repeated ear infections and may need ear tubes.

## How Pneumococcal Disease Spreads

Pneumococcal disease spreads when people who have the bacteria in their nose and throat cough or sneeze. Many people, especially children, have the bacteria in their nose or throat at one time or another without being ill. This is known as being a carrier. Doctors do not know why so few carriers become sick. In some carriers, though, pneumococcus will spread outside the nose to ears, blood, or lungs, making the person sick. ▶

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## Pneumococcal Conjugate Vaccine

There are dozens of types of pneumococcal bacteria. The first pneumococcal conjugate vaccine for infants was PCV7. This vaccine protected against seven types of the bacteria. At that time, those seven types caused most cases of severe pneumococcal infections among children. PCV7 has been used since 2000, and the results have been remarkable. Dr. Moore explains, “Over the entire period from 2001 through 2009, using PCV7 prevented about 131,000 cases of invasive pneumococcal disease in children younger than 5 years old.”

In February 2010, the U.S. Food and Drug Administration licensed another pneumococcal conjugate vaccine (PCV13). This vaccine replaces PCV7 and protects against six additional types of pneumococcal bacteria, plus the seven types that were in PCV7.

## Pneumococcal Disease Today

PCV7 was very effective in protecting against seven types of pneumococcal bacteria. Thanks to that vaccine, only a handful of cases of invasive pneumococcal disease caused by those seven types of the bacteria occur in children younger than 5 years old in the United States. According to CDC’s Dr. Cynthia Whitney, a long-time leader in CDC’s group that monitors vaccine-preventable pneumococcal disease. The PCV7 vaccine worked even better than we expected. And early evidence suggests that PCV13 is already reducing the number of serious infections in young children.”

Getting children vaccinated is the best way to protect them from getting pneumococcal disease. “PCV13 does not protect children from infection with every type of pneumococcal bacteria, but it does protect them from the most common ones that cause serious illness,” according to Dr. Meg Fisher of the American Academy of Pediatrics.

“Another benefit of getting this vaccine is that pneumococcal infections can sometimes be hard to treat. That’s because some types of the bacteria have become resistant to antibiotics,” explains Dr. Fisher. “So, being able to prevent more pneumococcal infections through vaccination is very important for keeping children healthy and safe from infection.”

“No serious side effects have been associated with the pneumococcal vaccine and getting vaccinated is much safer than getting harmful kinds of pneumococcal disease, like meningitis and blood infections,” says Dr. Fisher. In the United States, the first dose of vaccine is recommended at 2 months of age. Second and third doses are recommended at 4 months and 6 months of age, with a booster at 12 to 15 months of age. Children who miss any of their shots should still get the vaccine up until their 5<sup>th</sup> birthday. However, young children (12 through 23 months of age) who get inactivated flu vaccine and PCV13 at the same time appear to be at increased risk for seizures caused by fever. These seizures, called febrile seizures, are scary for parents, but they are not harmful to children. Ask your child’s doctor for more information.

“It’s very important that parents understand that even though fewer children now get serious pneumococcal infections, thanks to vaccination, we need to make sure that every baby gets pneumococcal vaccine on time and receives all the recommended doses,” says Dr. Whitney. “Pneumococcal bacteria are still out there. People can have pneumococcal bacteria in the back of their nose even if they are not sick, and infants and young children who are not protected by pneumococcal vaccination can catch the bacteria from these people and become ill.”

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## Benefits of PCV13

Getting PCV13 as recommended—

- Saves lives.
- Prevents hospitalizations.
- Protects young children, who are at greatest risk for serious diseases.
- Keeps others safe. As more infants have been vaccinated against pneumococcal disease, this disease also decreased in children and adults who had not received the vaccine. This is known as herd immunity.

## Risks of PCV13

- Mild side effects are fever, redness, tenderness or swelling where the shot was given, becoming fussy or drowsy, or loss of appetite.
- Severe side effects have not been associated with PCV13.

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*The Centers for Disease Control and Prevention, the American Academy of Family Physicians, and the American Academy of Pediatrics strongly recommend vaccines.*

**800-CDC-INFO (800-232-4636) <http://www.cdc.gov/vaccines>**