

Childhood Whooping Cough Vaccine Protects Most Children For At Least 5 years



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The results from a recent large study show that diphtheria-tetanus-acellular pertussis (DTaP) vaccines do a very good job of protecting 4 through 10 year old children from pertussis, or whooping cough. Overall effectiveness of the vaccine was measured at 88.7 percent, which is similar to the levels found in clinical trials done before the vaccines were licensed.

The results were presented at the 49th Annual Meeting of the Infectious Diseases Society of America in Boston, by CDC epidemiologist Lara Misegades, Ph.D. The study also found that vaccine effectiveness was 98.1 percent among children who received their fifth DTaP dose within the past year. For each year after this, there was a modest decrease in protection. The report showed that by the time children were five or more years past their last DTaP dose, long-term effectiveness had fallen to 71.2 percent.

CDC researchers expected that protection would fade over time, but before now did not have concrete estimates on long-term duration of protection. The study also determined that children who never received any doses of DTaP vaccine faced odds of having whooping cough at least eight times higher than children who received all five doses of the vaccine.

“Our study was carefully designed to evaluate waning immunity, and the case-control methodology allowed us to directly estimate vaccine effectiveness,” Misegades said. “The results reassure us that DTaP is working and reinforce the need for a booster dose of Tdap at 11 or 12 years of age.”

In collaboration with the California Department of Public Health, CDC reviewed medical records of more than 4,000 children from 15 California counties during the state’s 2010 whooping cough epidemic and reviewed these medical records with personal visits to more than 250 medical practices to read through each chart. The final analysis included more than 600 children with whooping cough and more than 2,000 children without infection in a comparison group.

Whooping cough is a serious and highly contagious respiratory disease that can cause long, violent coughing fits and the characteristic “whooping” sound when a person gasps for air. It takes a toll on anyone, but for infants it can be deadly. In 2010, 27,550 cases of whooping cough were reported nationally with 27 deaths — 25 of which were infants. Worldwide, there are 30-50 million cases of whooping cough per year resulting in about 300,000 deaths.

CDC officials stress that vaccines are the best way to prevent whooping cough. In addition, people who do catch whooping cough after being vaccinated are much less likely to be hospitalized or die from the disease. Because of the vaccines, the US no longer sees 200,000 cases of whooping cough each year. “Vaccines are our best protection against whooping cough, and they protect us well against severe and fatal disease,” said Misegades.

CDC recommends that infants and children get DTaP vaccine at 2 months, 4 months, 6 months, and 15 through 18 months of age. A booster of DTaP is given at 4 through 6 years of age. Because protection from DTaP fades over time, CDC recommends another dose of whooping cough vaccine, known as Tdap, for adolescents — ideally at 11 or 12 years — and adults. Adults who did not receive Tdap as preteens should get one dose now. By protecting themselves, older children and adults can form a “cocoon of protection” around the babies in their lives that may be too young to be fully protected by DTaP vaccine.

To learn more, visit CDC’s pertussis website at www.cdc.gov/pertussis or call 800-CDC-INFO.