



Frequently Asked Questions about

The DTaP Vaccine

(Diphtheria-Tetanus-Acellular Pertussis)

Are the DTP and DTaP vaccines safe?

- Yes, both DTP and DTaP vaccines are safe, although DTP is no longer recommended for use in the United States as of 1997. DTP is an older version of the vaccine that uses “whole cell” pertussis. DTaP is a newer version of the vaccine that uses a purified “acellular” formulation which produces fewer side effects.
- Millions of doses of DTaP have been given to American children since the Food and Drug Administration approved this vaccine in 1991. Adverse events that occur after vaccination are reported to the Vaccine Adverse Event Reporting System (VAERS). With DTaP, fewer than 0.3 serious adverse events are reported per 10,000 children vaccinated. With DTP, about 1 serious adverse event was reported per 10,000 children vaccinated.¹

Did the DTP vaccine cause sudden infant death syndrome (SIDS)?

- No, the DTP vaccine did not cause SIDS. The Institute of Medicine (a prestigious medical research organization funded by Congress to provide objective, timely, authoritative health information to government and the public) reviewed all available scientific evidence about SIDS occurring after DTP immunization. They concluded that the DTP vaccine does not cause SIDS.²

Does the DTP or DTaP vaccine cause epilepsy or febrile seizures?

- There is no evidence that DTP vaccine caused epilepsy, a disorder marked by recurring seizures. Medical experts reviewed 112 cases of epilepsy in children immunized with DTP but did not find a significant relationship between the administration of the vaccine and the development of epilepsy.³
- However, a small but significant relationship was found between DTP vaccine and febrile seizures (seizures brought on by a fever). Children with a personal or family history of seizures may be at greater risk of having febrile seizures after the DTP vaccine.³ Febrile seizures are common in early childhood and go away by the time a child is six or seven years old. They are not associated with any effects on the child’s physical abilities or intelligence.
- The DTaP vaccine is less likely than the DTP vaccine to cause febrile seizures. A febrile seizure occurs in 0.05 of every 10,000 children vaccinated with DTaP, but 0.17 of every 10,000 children vaccinated with DTP.¹
- DTaP is safe and recommended even for children with a family history (in siblings or parents) of seizures.⁴

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The DTaP Vaccine (continued)

Since some children have experienced adverse effects after the pertussis vaccine, can my child get the diphtheria and tetanus vaccines only?

- There is a combination diphtheria and tetanus vaccine that does not include the pertussis vaccine. However, children not given the pertussis vaccine are at risk for developing the disease pertussis (whooping cough), a highly contagious illness that can be life threatening. Outbreaks of pertussis continue to occur in all 50 states and the District of Columbia.⁵ A child is far more likely to develop health problems as a result of pertussis than as a result of an adverse effect from the vaccine.
- Infants are at the greatest risk of serious complications and death from pertussis. About 66% of infants with pertussis are hospitalized.⁵ Before the vaccine was used in the United States, 150 cases were reported for every 100,000 people.⁶ In the 1990s, only 1 or 2 cases were reported for every 100,000 people.^{5,6} Three-quarters of these cases are in children younger than 10 years.⁵
- Teenagers and young adults (including parents) are frequent carriers of the pertussis germ. When a young adult has pertussis, he or she may only have symptoms of a cold (runny nose and lingering cough) or no symptoms at all. In fact, people are most contagious at the beginning of a pertussis infection, when symptoms are minimal, such as a runny nose or a cough.
- The new version of the pertussis vaccine (included in the DTaP vaccine) is far less likely than that used in the DTP vaccine to cause any adverse event.

Does the full series of DTaP shots protect my child for the rest of his or her life?

- No. Protection declines over time. After a child receives the full series of DTP or DTaP vaccines (at 2, 4, 6, and 12-18 months of age and at 4-6 years of age), booster vaccines for tetanus and diphtheria (known as the Td vaccine) should be given at age 11 or 12 years and are recommended every 10 years throughout adulthood.

Why is the DTP vaccine still used in some countries if DTaP is safer?

- Whole cell pertussis vaccines (DTP) are extremely safe and effective. More than half of those immunized experience no side effects at all. Most side effects are very mild, such as fever or soreness at the injection site. Because of its overall excellent safety record, and the fact that it is significantly cheaper than the acellular vaccine, the whole cell vaccine is used in many countries and in the World Health Organization's Expanded Program of Immunization.⁷
- However, because the uncomfortable mild reactions and other rare but severe reactions (such as seizures) that occasionally occur following administration of the DTP vaccine, research continued to develop a vaccine that would cause fewer side effects. The acellular pertussis vaccines (DTaP) were the result of this research.

Frequently Asked Questions about
The DTaP Vaccine (continued)

Sources:

- ¹ Rosenthal S, Chen R, Hadler S. The safety of acellular pertussis vaccine vs. whole-cell pertussis vaccine. A postmarketing assessment. *Arch Pediatr Adolesc Med* 1996;150:457-460.
- ² Institute of Medicine. Adverse effects of pertussis and rubella vaccines. Washington, DC: National Academy Press; 1991. (<http://www.nap.edu/books/0309044995/html/index>)
- ³ Cherry JD, Holtzman AE, Shields WD, et al. Pertussis immunization and characteristics related to first seizures in infants and children. *J Pediatr* 1993;122:900-903.
- ⁴ Livengood JR, Mullen JR, White JW, Brink EW, Orenstein WA. Family history of convulsions and use of pertussis vaccine. *J Pediatr* 1989;115:527-531.
- ⁵ Centers for Disease Control and Prevention. Pertussis—United States, January 1992-June 1995. *MMWR Morb Mortal Wkly Rep* 1995;44:525-529.
- ⁶ Centers for Disease Control and Prevention. Pertussis—United States, 1989-1991. *MMWR Morb Mortal Wkly Rep* 1992;41:11-19.
- ⁷ World Health Organization Web site: <http://www.who.int/vaccines-diseases/diseases/pertussisvaccine.htm>