Centers for Disease Control and Prevention

Vaccine Safety

Vaccine Safety Home

Diphtheria, Tetanus, and Pertussis Vaccines

Safety Information

About the Diseases

Diphtheria, tetanus, and pertussis are potentially serious bacterial diseases that can be prevented through vaccination.

Diphtheria can cause a thick membrane-like covering in the back of the throat. It can lead to breathing problems, paralysis, heart failure, and even death. The bacteria can spread from person to person by coughing, sneezing, or touching infected open sores or ulcers. Learn more about diphtheria.

Tetanus (also known as lockjaw) is a serious disease that causes painful tightening of the muscles, usually all over the body. It can lead to "locking" of the jaw, preventing a person from opening their mouth or swallowing. Tetanus leads to death in about 1 in 10 cases. The bacteria that cause tetanus is not spread from person to person. Instead, it is found in soil, dust, and manure (feces) and can get into the body through open wounds. Learn more about tetanus.

Pertussis (also known as whooping cough) is a highly contagious respiratory tract infection. Although it initially resembles an ordinary cold, whooping cough can become more serious, particularly in infants. The bacteria can spread from person to person by coughing, sneezing, or sharing the same breathing space for an extended period of time. Learn more about pertussis.

Vaccines are available that can help prevent these diseases. All infants and children, adolescents, and adults should get vaccinated. CDC recommends:

- Infants and children should get five doses of the DTaP vaccine between the ages of 2 months and 6 years.
- Children should get one dose of Tdap between the ages of 11 and 12 years.
- People who are pregnant should get one dose of the Tdap vaccine every pregnancy, preferably early in the 3rd trimester.
- Adults should get one dose of Tdap or Td every 10 years. Adults who have never received Tdap should get it in place of their next Td dose.

Vaccine Information Statements

Vaccine Information Statements (VISs) are information sheets produced by CDC that explain both the benefits and risks of a vaccine.

DTaP

Diphtheria, tetanus, and pertussis vaccine for infants and children

Tdap

Tetanus, diphtheria, and pertussis vaccine for adolescents and adults

Td

Tetanus and diphtheria vaccine for adolescents and adults

Available Vaccines and Package Inserts

There are several different types of vaccines that can safely help prevent diphtheria, tetanus, and pertussis:

- **DTaP** (diphtheria, tetanus, and acellular pertussis) vaccine, which is given to children
- **Tdap** (tetanus, diphtheria, and acellular pertussis) vaccine, which is given to adolescents and adults
- **Td** (tetanus and diphtheria) vaccine, which is given to adolescents and adults

Child and Adult Immunization Schedules
Get CDC's official recommended immunization schedules, including catch-up schedules, for children, adolescents, and adults.

Manufacturer Package Inserts

DTaP (for infants and children up to 7 years)

Daptacel [PDF – 26 pages]
The Food and Drug Administration (FDA) approved this vaccine in 2002. It is approved for use in children who are 6 weeks through 6 years of age to protect against diphtheria, tetanus, and pertussis.

Infanrix [PDF – 19 pages]
FDA approved this vaccine in 1997. It is approved for use in children who are 6 weeks through 6 years of age to protect against diphtheria, tetanus, and pertussis.

Kinrix [PDF – 15 pages]
FDA approved this vaccine in 2008. It is approved for use in children who are 4 to 6 years of age to protect against diphtheria, tetanus, pertussis, and polio.

Pediarix [PDF – 24 pages]
FDA approved this vaccine in 2002. It is approved for use in children who are 6 weeks through 6 years of age to protect against diphtheria, tetanus, pertussis, polio, and hepatitis B.

Pentacel [PDF – 37 pages]
FDA approved this vaccine in 2008. It is approved for use in children who are 6 weeks through 4 years of age to protect against diphtheria, tetanus, pertussis, *Haemophilus Influenzae* type B (Hib), and polio.

Quadracel [PDF – 15 pages]
FDA approved this vaccine in 2015. It is approved for use in children who are 4 through 6 years of age to protect against diphtheria, tetanus, pertussis, and polio

Vaxelis [PDF – 20 pages]
FDA approved this vaccine in 2018. It is approved for use in children aged 6 weeks through 4 years of age to protect against diphtheria, tetanus, pertussis, Hib, hepatitis B, and polio.

Tdap (for preteens, teens, and adults)

Boostrix [PDF – 26 pages]
FDA approved this vaccine in 2005. It is approved for use in people 10 years of age and older to protect against diphtheria, tetanus, and pertussis. FDA approved the use of the Boostrix vaccine in people who are pregnant to prevent infant pertussis in 2022.

Adacel [PDF – 29 pages]
FDA approved this vaccine in 2005. It is approved for use in people 10 to 64 years of age to protect against diphtheria, tetanus, and pertussis. FDA approved the use of the Adacel vaccine in people who are pregnant to prevent infant pertussis in 2023.

Td (for preteens, teens, and adults)

Generic tetanus and diphtheria vaccine – TDVax [PDF – 7 pages]
There is a generic vaccine to protect against tetanus and diphtheria and in people 7 years of age and older. It was approved by FDA in 1967.

Tenivac [PDF – 14 pages]
FDA approved this vaccine in 2003. It is approved for use in people 7 years of age and older to protect against tetanus and diphtheria.

Common Side Effects

DTaP and Tdap vaccine are safe and effective at preventing diphtheria, tetanus, and pertussis. Vaccines, like any medicine, can have side effects. The most common side effects are usually mild and go away on their own.

Severe allergic reactions following vaccination are rare but can be life threatening.
Symptoms of a severe allergic reaction can include hives, swelling of the face and throat, difficulty breathing, a fast heartbeat, dizziness, and weakness.

If such reactions occur, call 9-1-1 and get the person to the nearest hospital.

DTaP Vaccines (for infants and children up to 7 years)

Common Side Effects

- Soreness or swelling where the shot was given
- Fever
- Fussiness
- Feeling tired
- Loss of appetite
- Vomiting

Most side effects are mild to moderate and can last from 1 to 3 days.

Who Should Not Get DTaP Vaccine

DTaP is not for children ages 7 years and older.

A person who has ever had a life-threatening allergic reaction after a previous dose of a diphtheria, tetanus, or pertussis containing vaccine, or has a severe allergy to any part of this vaccine, should not get a DTaP vaccine.

Anyone who has been in a coma or had long, repeated seizures within 7 days of administration of a previous dose of any pertussis vaccine.

Parents should talk to their child's healthcare provider before getting the DTaP vaccine if their child:

- Developed a condition called Guillain-Barré Syndrome (GBS), or
- Had severe pain or swelling after a previous dose of any vaccine that protects against tetanus or diphtheria.

In some cases, the healthcare provider may decide to postpone the child's DTaP vaccination to a future visit.

Children who are moderately or severely ill with or without fever should usually wait until they recover before getting the DTaP vaccine.

Tdap Vaccines (for adolescents and adults)

Common Side Effects

- Pain, redness, or swelling where the shot was given
- Mild fever
- Headache
- Feeling tired
- Nausea, vomiting, diarrhea, stomachache

Who Should Not Get Tdap Vaccine

A person who has ever had a life-threatening allergic reaction after a previous dose of diphtheria, tetanus or pertussis containing vaccine, or has a severe allergy to any part of this vaccine, should not get Tdap vaccine.

Anyone who has been in a coma or has had long, repeated seizures within 7 days after any pertussis vaccine, unless a cause other than the vaccine was found. They can still get a Td vaccine.

A person should talk with their healthcare provider before getting the Tdap vaccine if they:

- Have a progressive or unstable neurologic disorder, including infantile spasms,
- Have uncontrolled seizures or progressive encephalopathy; Tdap should be deferred until neurologic status is clarified and stabilized

- Have developed a condition called Guillain-Barré Syndrome (GBS), or
- Are moderately or severely ill.

Td Vaccine (for adolescents and adults)

Common Side Effects

- Pain, redness, or swelling where the shot was given
- Mild fever
- Headache
- Feeling tired
- Nauseas, vomiting, diarrhea, or stomachache

Who Should Not Get Td Vaccine

A person who has ever had a severe allergic reaction after a previous dose of any tetanus or diphtheria containing vaccine should not get a Td vaccine.

People should talk to their healthcare provider before getting the Td vaccine if they:

- Had severe pain or swelling after any vaccine containing diphtheria or tetanus,
- Developed a condition called Guillain-Barré Syndrome (GBS), or
- Are moderately or severely ill.

A Closer Look at the Safety Data

DTaP (infants and children up to 7 years)

- DTaP safety reviews of Vaccine Adverse Event Reporting System (VAERS) reports found no unexpected health concerns related to the vaccine.
  - Several studies of DTaP vaccine safety have looked for neurologic problems or seizures after children were vaccinated and found that there is no increased risk for these concerns with the DTaP vaccine.
  - There is a small increased risk for febrile seizures when inactivated influenza vaccine (flu shot) is given during the same doctor's visit as a DTaP vaccine.

- DTaP may cause mild injection site reactions. However, severe injection site reactions are rare, and may be less frequent when the vaccine is injected into the leg rather than into the arm. Reactions happen about as often when DTaP is combined with other vaccines.

Tdap (adolescents and adults)

- Tdap safety reviews of VAERS reports have found no unexpected safety concerns for the general population, for people who are pregnant, or for adults over age 65.
- In the Vaccine Safety Datalink (VSD), studies have found no association between Tdap vaccination and Guillain-Barré Syndrome or other neurologic disorders. Other studies have found that there is no increased risk for other types of health problems, such as allergies, blood disorders, and chronic illnesses.
- Although injection site reactions are common, studies have found a low rate of severe injection site reactions. These local reactions are unusual even when the vaccine is given at the same time as Menactra, a meningococcal vaccine, or when a person receives several doses of Tdap vaccine over a short time period.

Seizures caused by fever are called “febrile seizures.” When they occur in young children, these seizures are frightening for parents. However, most children recover from them quickly and have no long-lasting effects. Learn more about febrile seizures.

Which adverse events are considered “serious?”

By the Code of Federal Regulations (CFR) Title 21, an adverse event is defined as serious if it involves any of the following outcomes:

- Death
- A life-threatening adverse event
- A persistent or significant disability or incapacity
- A congenital anomaly or birth defect
- Hospitalization, or prolongation of existing hospitalization

Learn more about adverse events.

How CDC Monitors Vaccine Safety

CDC and FDA monitor the safety of vaccines after they are approved or authorized. If a problem is found with a vaccine, CDC and FDA will inform health officials, health care providers, and the public.

CDC uses 3 systems to monitor vaccine safety:

- The Vaccine Adverse Event Reporting System (VAERS): an early warning system, co-managed by CDC and FDA, to monitor for potential vaccine safety problems. Anyone can report possible vaccine side effects to VAERS.
- The Vaccine Safety Datalink (VSD): a collaboration between CDC and 13 healthcare organizations that conducts vaccine safety monitoring and research.
- The Clinical Immunization Safety Assessment (CISA) Project: a partnership between CDC and several medical research centers that provides expert consultation and conducts clinical research on vaccine-associated health risks.

More Information

Who Should Not Get Vaccinated

Some people should not get certain vaccines or should wait before getting them. Read the CDC guidelines for each vaccine.

Vaccine Abbreviations

Common vaccine abbreviations and acronyms.

FAQs about Combination Vaccines

From the Immunization Action Coalition.

Related Scientific Articles

DTaP Vaccines

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Tdap Vaccines

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