

**Centers for Disease Control and Prevention**  
National Center for Immunization and Respiratory Diseases



### Tdap/Td Vaccines

**September 2018**

Chapters 7, 21 and 16

Photographs and images included in this presentation are licensed solely for CDC/NORID online and presentation use. No rights are implied or extended for use in printing or any use by other CDC COs or any external audiences.

---

---

---

---

---

---

---

---

### Why Adolescents and Adults Need Pertussis Vaccine

- **20,762 pertussis cases reported in the U.S. in 2015, 15,737 cases in 2016**
  - >50% of cases in those 11 years and older
- Infection may be asymptomatic, or may present as classic pertussis
- Disease often milder than in infants and children
  - Persons with mild disease may transmit the infection
- Older persons and household contacts often source of infection for infants and children

\* Provisional data [www.cdc.gov/pertussis](http://www.cdc.gov/pertussis)

---

---

---

---

---

---

---

---

### Pertussis Complications Among Adolescents and Adults

- Difficulty sleeping
- Urinary incontinence
- Pneumonia
- Rib fracture
- Plus:
  - Medical costs
  - Missed school and work
  - Impact on public health system

---

---

---

---

---

---

---

---



---

---

---

---

---

---

---

---

**Tdap Vaccines**

- **2 products available licensed for single use with different age indications**
  - Less diphtheria toxoid and acellular pertussis antigen than DTaP
  - Lowercase letters = less antigen!
- **Boostrix (GlaxoSmithKline)**
  - FDA approved for persons 10 years of age and older
- **Adacel (Sanofi Pasteur)**
  - FDA approved for persons 10 through 64 years of age

---

---

---

---

---

---

---

---

**Adolescent Tdap Vaccination Rates**

---

---

---

---

---

---

---

---

### Tdap Vaccination Recommendations

- Adolescents 11 through 18 years of age
  - Preferred administration at 11-12 years
- Adults 19 years of age and older
- Women during every pregnancy\*

\*Off-label recommendation. MMWR 2011;62(No. 7):131-5

---

---

---

---

---

---

---

---

### Use of Tdap Among Children 7 through 10 Years of Age\*

- Persons 7 through 10 years of age who are not fully immunized against pertussis (including those never vaccinated or with unknown pertussis vaccination status) should receive a single dose of Tdap
- For those who received Tdap at ages 7 through 10 years as part of the catch-up schedule, they should receive another dose of Tdap at age 11-12 years old \*\*

\*Off-label recommendation. MMWR 2011; 60 (No. 1):13-5  
\*\*Liang J, Tiwan T, Moro P, et al. Prevention of Pertussis, Tetanus, and Diphtheria with Vaccines in the United States: Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR Recomm Rep 2013;62(No. 6):21-46.

---

---

---

---

---

---

---

---

### “Not Fully Immunized”

- Children 7 through 10 years of age are not fully immunized against pertussis if they have received:
  - Fewer than 4 doses of DTaP OR
  - Four doses of DTaP and last dose before 4 years of age

MMWR 2011; 60 (No. 1):13-5

---

---

---

---

---

---

---

---

### Adolescents and Catch Up Guidance

- Adolescents who received Tdap inadvertently or as part of the catch-up series between 7–10 years of age should be given the routine adolescent Tdap dose at 11–12 years of age

**Catch-Up Guidance for Children 7 through 18 Years of Age - Tdap**

**Catch-Up Guidance for Children 7 through 18 Years of Age - Tdap/DTaP**

MMWR 67(2):1-44  
 Catch-up Guidance for Children 7 through 18 Years of Age : <https://www.cdc.gov/vaccines/schedules/downloads/child/0-18/tdap.pdf>

---

---

---

---

---

---

---

---

---

---

### Td Vaccine

- Routinely recommended every 10 years following adolescent Tdap vaccine
- Also approved for primary series doses

---

---

---

---

---

---

---

---

---

---

### Tdap For Persons Without History of DTaP or DTaP

- All adolescents and adults should have documentation of having received a series of DTaP, DTP, DT, or Td
- Persons without documentation should receive a series of 3 vaccinations
- One dose should be Tdap, preferably the first

---

---

---

---

---

---

---

---

---

---

### Tdap For Persons Without History of DTP or DTaP

▪ **Preferred schedule:**

- Dose 1 Tdap
- Dose 2 Td at least 4 weeks after dose 1
- Dose 3 Td at least 6 months after dose 2
- Booster Td every 10 years

---

---

---

---

---

---

---

---

### Vaccine Administration Tdap Vaccines

▪ **Route: IM injection**

- Needle gauge: 22–25 gauge
- Needle length\*: 1–1.5 inch depending on the patient’s age and/or weight

▪ **Site\*:**

- 7 years and older: Deltoid muscle is preferred; vastus lateralis muscle may be used

\*Professional judgement should be used to determine the proper needle length and site. Influencing factors include injection technique, local reaction, number of vaccines to be administered, patient age, size and muscle mass

---

---

---

---

---

---

---

---

### Tdap Vaccine Administration Errors

We administered:	Now:
Tdap to a child younger than 7 years of age	If dose 1, 2 or 3: Dose does not count. Administer DTaP as soon as possible IF dose 4 or 5: Dose counts, revaccination is not indicated*
Fully vaccinated child 7 through 10 years of age	Tdap dose does not count as the adolescent dose of Tdap. Tdap should be administered at 11-12 years of age

\*If meets minimum age and interval (if applicable)

---

---

---

---

---

---

---

---

### Tdap Contraindications

- Severe allergic reaction to vaccine component or following a prior dose
- Encephalopathy not due to another identifiable cause within 7 days of administration of a pertussis-containing vaccine

---

---

---

---

---

---

---

---

### Tdap Precautions

- History of Guillain-Barré syndrome within 6 weeks after a prior dose of tetanus toxoid-containing vaccine
- Progressive neurologic disorder until the condition has stabilized
- History of a severe local reaction (Arthus reaction) following a prior dose of a tetanus and/or diphtheria toxoid-containing vaccine
- Moderate or severe acute illness

---

---

---

---

---

---

---

---

### Conditions NOT Precautions for Tdap

- Following a dose of DTaP/DTP:
  - Temperature 105°F (40.5°C) or higher
  - Collapse or shock-like state
  - Persistent crying lasting 3 hours or longer
  - Convulsions with or without fever
  - History of an extensive limb swelling reaction

---

---

---

---

---

---

---

---

### Tdap/Td Adverse Reactions

- Local reactions (pain, redness, swelling)
  - 21%-66%
- Temp of 100.4°F or higher
  - 1.4%
- Adverse reactions occur at approximately the same rate as Td alone (without acellular pertussis vaccine)

---

---

---

---

---

---

---

---

### Case Study: Tarique

- Tarique is 8 years old, healthy, with no chronic medical conditions
- His vaccination history, obtained from the state immunization information system (IIS), includes:
  - DTaP 6 months of age
- His father reports within 2 days after receiving DTaP, Tarique experienced persistent, inconsolable crying lasting more than 3 hours

---

---

---

---

---

---

---

---

### Case Study: Tarique

- Tarique's tetanus and diphtheria series is not up to date
- In light of Tarique's crying episode, is Tdap vaccine contraindicated?
  - Yes
  - No

---

---

---

---

---

---

---

---

## DTaP Contraindications

### Contraindications

Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>1,2</sup>

Encephalopathy (e.g., coma, decreased level of consciousness, or prolonged seizures) not attributable to another identifiable cause within 7 days of administration of previous dose of DTP or DTaP<sup>3</sup>

<sup>1</sup>Further vaccination with any of the three components of DTaP should be deferred because of uncertainty as to which component of the vaccine might be responsible.

<sup>2</sup>Because of the importance of tetanus vaccination, persons who experience anaphylactic reactions should be referred to an allergist to determine whether they have a specific allergy to tetanus toxoid and can be desensitized to tetanus toxoid.

<sup>3</sup>In such cases, DT vaccine should be administered for the remaining doses in the vaccination schedule to ensure protection against diphtheria and tetanus.

MMWR 67(2):1-44

---

---

---

---

---

---

---

---

---

---

## DTaP Precautions

### Precautions<sup>1</sup>

Progressive or unstable neurologic disorder, including infantile spasms, uncontrolled seizures, or progressive encephalopathy

Defer DTaP until neurologic status clarified and stabilized  
Guillain-Barré syndrome <6 weeks after previous dose of tetanus-toxoid-containing vaccine

History of Arthus-type hypersensitivity reactions after a previous dose of tetanus- or diphtheria-toxoid-containing vaccines

Defer vaccination until at least 10 years have elapsed since the last tetanus-toxoid-containing vaccine

Moderate or severe acute illness with or without fever

Defer vaccination until patient is no longer moderately to severely ill

<sup>1</sup>Events or conditions listed as precautions should be reviewed carefully. Benefits of and risks for administering a specific vaccine to a person under these circumstances should be considered. If the risk from the vaccine is believed to outweigh the benefit, the vaccine should not be administered. If the benefit of vaccination is believed to outweigh the risk, the vaccine should be administered. Whether and when to administer DTaP to children with proven or suspected underlying neurologic disorders should be decided on a case-by-case basis.  
MMWR 67(2):1-44

---

---

---

---

---

---

---

---

---

---

## Contraindications and Precautions Job Aids

The image shows two side-by-side screenshots. The left screenshot is the CDC Vaccine Contraindications and Precautions web page, displaying a table with columns for Vaccine, Contraindications, and Precautions. The right screenshot is the IAC Guide to Contraindications and Precautions, which is a detailed reference document for healthcare providers.

CDC Vaccine Contraindications and Precautions web page <https://www.cdc.gov/vaccines/imz/Administrators/contraindications.html>  
IAC Guide to Contraindications and Precautions <https://www.immunize.org/iaac/guide-to-contraindications-and-precautions>

---

---

---

---

---

---

---

---

---

---

### Routine Td Schedule for Unvaccinated Persons 7 Years of Age or Older

- Persons aged 7 years and older who are not fully immunized with DTaP vaccine should receive:
  - 1 dose (preferably the first) of Tdap vaccine as part of the catch-up series
  - If additional doses are needed, use Td vaccine
- Previous doses of DTaP count toward completion of the series
  - Number of doses needed to complete the series depends on the age at the first dose

Epidemiology and Prevention of Vaccine-Preventable Diseases, 13th edition "Pertussis" chapter <https://www.cdc.gov/vaccines/pubs/pinkbook/part.html>

---

---

---

---

---

---

---

---

### Catch-up Schedules for Children Age 7 Years And Older

Previously vaccinated WITH a dose BEFORE the 1st birthday		
Dose 1 – 2	Dose 2 – 3	Dose 3 – 4
4 weeks	4 weeks	6 months
Previously unvaccinated or previously vaccinated WITH 1 <sup>st</sup> dose AT/AFTER the 1 <sup>st</sup> birthday		
Dose 1 – 2	Dose 2 – 3	
4 weeks	6 months	

FIGURE 2. Catch-up immunization schedule for persons aged 4 months through 18 years who start late or who are more than 1 month behind—United States, 2017 [https://www.cdc.gov/vaccines/schedules/downloads/child/0\\_18years-child-combined-schedule.pdf](https://www.cdc.gov/vaccines/schedules/downloads/child/0_18years-child-combined-schedule.pdf)

---

---

---

---

---

---

---

---

### Questions?




---

---

---

---

---

---

---

---