

# Tetanus Immunization Recommendations for Persons Less Than Seven Years Old

*This position paper represents a reflection of expert opinions regarding current knowledge about tetanus immunization. It should complement, but not supplant, sound clinical judgment. [This document was developed by the American College of Emergency Physicians Scientific Review Committee and was approved by the Board of Directors on June 8, 1987. American College of Emergency Physicians: Tetanus immunization recommendations for persons less than seven years old. Ann Emerg Med October 1987;16:1181-1183.]*

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## INTRODUCTION

Recommendations for the prevention of tetanus in persons 7 years and older were published in a previous issue of *Annals of Emergency Medicine* [September 1986;15:1111-1112]. Because emergency physicians encounter children with varying immunization histories and injuries, familiarity with proper immunization standards is essential. The following guidelines, consistent with those of the Immunization Practices Advisory Committee of the US Public Health Service<sup>1</sup> and of the Committee on Infectious Diseases of the American Academy of Pediatrics, are recommendations of the American College of Emergency Physicians for tetanus immunization. Because diphtheria and pertussis immunization must be considered at the time of tetanus prophylaxis, recommendations for the use of these vaccines are included.

To maintain a high level of population immunity against diphtheria, immunization must begin in childhood and continue during adulthood with regular booster injections. The recommended dose of diphtheria toxoid for children less than 7 years old is higher than that for adults; hence, a different preparation is used (see Definitions).

Immunization against pertussis is not recommended in persons more than 7 years old. However, the incidence and severity of pertussis are much greater in children less than 7 than in older persons; pertussis vaccination usually should accompany tetanus prophylaxis in this younger age group. There are contraindications to pertussis vaccine, however, and the risks and benefits of using combined vaccine preparations must be considered for each patient.

Contact with a health provider in the emergency department should provide an opportunity to assess the immunization status of the child, to provide information regarding vaccine-preventable diseases, and (if not contraindicated by the present illness or injury or its management) to immunize children against diseases to which they are susceptible.

## DEFINITIONS

DTP— Diphtheria and tetanus toxoids and pertussis vaccine, adsorbed, for use in persons less than 7 years old.

DT— Diphtheria and tetanus toxoids, adsorbed, for use in persons less than 7 years old.

Td— Tetanus and diphtheria toxoids, adsorbed, for use in persons 7 and older.

TIG— Tetanus immune globulin, human.

*Nontetanus-prone (clean) wound* — A nontetanus-prone wound is recent (less than six hours old); not infected or contaminated with feces, soil, saliva, etc; accessible to cleansing, irrigation, and debridement; and surrounded by

viable tissue.

*Tetanus-prone (dirty) wound* — A tetanus-prone wound is more than six hours old; contaminated with feces, soil, saliva, etc; surrounded by avascular or nonviable tissue; or infected. Puncture wounds and wounds created by crush injuries, burns, frostbite, or missiles should be considered tetanus prone.

**RECOMMENDED IMMUNIZATION SCHEDULES**

Recommendations for the routine immunization of persons less than 7 years old are outlined (Table 1). The appropriate uses of tetanus and diphtheria toxoids, pertussis vaccine, and tetanus immune globulin in wound management are summarized (Table 2).

Interrupting the recommended schedule or delaying one or more doses does not lead to a reduction in the level of immunity reached on completion of the primary series. Therefore, there is no need to restart a series regardless of the time elapsed between doses.

Adverse events following immunization, especially with pertussis vaccine, are uncommon but may be serious. Parents should be informed about the risks of immunization as outlined here. The Centers for Disease Control have developed "Important Information" statements about vaccines; these are available from most state health departments. Information regarding immunization against diphtheria, tetanus, and pertussis appears in the *Report of the Committee on Infectious Diseases*.<sup>2</sup>

**SIDE EFFECTS AND ADVERSE EVENTS**

Local reactions, generally erythema and induration, are common after immunization, as are mild systemic reactions such as fever and drowsiness. Abscesses at injection sites have been reported. Arthus-type hypersensitivity reactions, characterized by severe local reactions beginning two to eight hours after injection, may occur after immunization, particularly with frequent boosters. Anaphylaxis also has been reported after receiving diphtheria, tetanus, and/or pertussis antigens.

Moderate to severe systemic events (high fever, markedly abnormal crying, collapse, seizures, encephalopathy) occur infrequently after DTP injections but are contraindications to future administration of preparations contain-

**TABLE 1. Routine diphtheria, tetanus, and pertussis immunization schedules for persons less than 7 years old**

Dose	Age/Interval*	Product
Primary 1	6 weeks or older	DTP†
Primary 2	4 to 8 weeks after first dose	DTP†
Primary 3	4 to 8 weeks after second dose	DTP†
Primary 4	6 to 12 weeks after third dose	DTP†
Booster	4 to 6 years old‡	DTP†
Additional boosters	Every 10 years after last dose	Td

\*Customarily begun at 2 months of age, with subsequent doses at ages 4 months, 6 months, 15 to 18 months, and 4 to 6 years. Prolonging the interval between doses does not require restarting the series.  
 †Use DT if pertussis vaccine is contraindicated (see Contraindications). If the child is 1 year or older at time immunization is begun and pertussis vaccine is contraindicated, two doses of DT four to eight weeks apart followed by a third dose six to 12 months after the second complete the primary immunization with DT.  
 ‡Booster dose at age 4 to 6 years is not necessary if the fourth primary immunizing dose was administered after the fourth birthday.

**TABLE 2. Guide to tetanus prophylaxis in wound management in persons less than 7 years old**

History of Adsorbed Tetanus Toxoid	Nontetanus-Prone Wounds*		Tetanus-Prone Wounds*	
	DTP† (.5 mL IM)	TIG (250 U IM)	DTP† (.5 mL IM)	TIG (250 U IM)
Unknown or less than three doses	Yes‡	No	Yes‡	Yes
Three or more doses	No§	No	No ¶	No

\*See Definitions.  
 †Use DT if pertussis vaccine is contraindicated (see Contraindications).  
 ‡The primary immunization series should be completed.  
 §Yes, if the routine immunization schedule has lapsed (ie, to make up for missed dose).  
 ¶Yes, if the routine immunization schedule has lapsed, or if more than five years since last dose of tetanus toxoid.

ing pertussis vaccine (see Contraindications).

**CONTRAINDICATIONS**

The only contraindications to administration of tetanus and diphtheria toxoids are a history of neurologic complications or a severe hypersensitivity reaction (ie, anaphylaxis) following a previous dose. Local side effects alone do not contraindicate future doses. If a contraindication to tetanus toxoid exists in a person who has not completed a primary series and who sustains a tetanus-prone wound, only passive immunization with TIG should be given.

Prior to administration of DTP, the parent should be questioned about adverse event(s) after the previous dose. If any of the following occur after administration of pertussis vaccine, either alone or in DTP, further vaccination with pertussis antigen is contraindicated: encephalopathy within seven days of immunization; a convulsion, with or without fever, within three days; persistent, inconsolable crying for three hours or an unusual, high-pitched cry, within two days; collapse or shock-like state ("hypotonic-hyporesponsive episode") within two days; temperature of 40.5 C (105 F) or more within two days; or an allergic

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reaction such as anaphylaxis.

Infants and children with underlying neurologic disorders, including a history of convulsions, may have neurologic events temporally associated with immunization with DTP or DT. This may result in confusion about the cause of these events. Therefore, the decision to administer DTP to such children must be made on an individual basis. Space does not permit a

discussion of all the relevant considerations; the reader is referred to *MMWR*<sup>1</sup> and to the *Report of the Committee on Infectious Diseases*<sup>2</sup> for details.

#### **FOLLOW-UP**

Proper follow-up should be arranged for all wound patients and for immunization completion when appropriate. All patients should receive writ-

ten documentation of immunization provided.

#### **REFERENCES**

1. ACIP (Immunization Practices Advisory Committee): Diphtheria, tetanus, and pertussis: Guidelines for vaccine prophylaxis and other preventive measures. *MMWR* 1985;34:405-426.
2. Committee on Infectious Diseases, American Academy of Pediatrics: *Report of the Committee on Infectious Diseases*, ed 20. Elk Grove Village, Illinois, AAP, 1986, p 266-275, 498-501.