



TETANUS

1. **Agent:** Exotoxin of *Clostridium tetani*, a Gram-positive bacillus.
2. **Identification:**
 - a. **Symptoms:** Acute paralytic disease due to tetanus toxin produced by tetanus bacilli growing at site of injury; characterized by painful muscle contractions, principally involving masseter and neck muscles, secondarily muscles of trunk. Muscle contraction sometimes confined to region of injury.
 - b. **Differential Diagnosis:** Hypocalcemic tetany, reaction to antipsychotic and anti-depressive medications, central nervous system (CNS) disturbances, various types of poisonings.
 - c. **Diagnosis:** Clinical history, immunization history and anaerobic culture of suspicious wound or debrided tissue. Diagnosis is usually made clinically by excluding other possibilities.
3. **Incubation:** 3 days to 3 weeks, dependent on character, extent, and location of wound; average 8 days. The further the injury site is from the central nervous system, the longer the incubation period. In neonatal tetanus, symptoms appear 4-14 days after birth, averaging 7 days.
4. **Reservoir:** Organism is normal member of intestinal flora of animals and man; frequently found in soil.
5. **Source:** Soil, dust, animal or human feces, plaster, sutures, injection drug use.
6. **Transmission:** Tetanus spores enter the body usually through wound; occasionally from parenteral injection. Neonatal tetanus occurs through infection of umbilical stump.
7. **Communicability:** Not contagious from human to human.

8. Specific Treatment:

- a. Supportive care including appropriate medications to control tetanus spasms.
 - b. Tetanus Immune Globulin (TIG) in a single total dose of 3000 to 6000 units is recommended for children and adults.
 - c. Oral (or IV) metronidazole (30 mg/kg/day) given in 4 divided doses (maximum 4 g/day) for 10 to 14 days. Parenteral penicillin G, 100,000 U/kg/day, every 4 to 6 hours can be given as an alternative.
9. **Immunity:** The disease does not confer immunity. The primary series of immunizations is needed. Following a properly administered primary series, most people retain antitoxin levels that exceed the minimal protective level for 10 years after the last dose.

REPORTING PROCEDURES

1. **Reportable.** (California Code of Regulations, Section 2500.) Report case or suspect case within 7 calendar days from the time of identification by mail, telephone, fax, or electronic report.
2. **Report Forms: TETANUS SURVEILLANCE WORKSHEET (sss/0603).**

SUPPLEMENTAL INJECTING DRUG USE QUESTIONNAIRE FOR TETANUS CASE (CA DHS).

3. Epidemiologic Data:

- a. Description of wound: date and place, anatomic site, type, contamination, depth, and signs of infection.
- b. Immunization history.
- c. History of military or National Guard service, as evidence of past immunization.
- d. Medical care for the presumptive wound or lesion that led to tetanus before tetanus symptoms began, including information



about non-acute wounds and associated medical history.

- e. Clinical course: type of tetanus disease, TIG therapy given.

CONTROL OF CASE, CONTACTS & CARRIERS

Investigate within 7 days.

CASE:

Isolation: None.

CONTACTS: Not applicable.

CARRIERS: Not applicable.

PREVENTION-EDUCATION

1. Recommend immunization with pediatric diphtheria-tetanus-pertussis or diphtheria-tetanus (DTaP or DT) vaccine for children under 7; tetanus-diphtheria (Td) vaccine for those 7 years and older and tetanus-diphtheria-pertussis (Tdap) (one time only) for persons 11 – 64 years of age. All Adults should receive Td boosters every 10 years. Adolescents 11-18 can receive their first tetanus booster in the form of Tdap. (Please consult current Advisory Committee on Immunization Practices recommendations on the use of Tdap vaccine since usage will be expanded over the next few years.)
2. Recovery from disease does not result in immunity. Primary immunization is indicated after recovery for adults and neonates.
3. Remove foreign matter from wounds by through cleansing. Give TIG in a preventive dose, as indicated for contaminated wounds. For persons with less than 3 previous doses of a tetanus toxoid containing vaccine or when vaccine history is unknown a Td should be given as part of routine wound management. For contaminated “dirty” wounds, a Td should be given even if the person has received 3 or more doses of a tetanus toxoid containing vaccine, if 5 or more years have elapsed since the last dose of vaccine. See section on wound management in *Recommendations for Use and Storage of Immunobiologics and Other Prophylactic Agents (B-71)*.

4. Immunization is not contraindicated during pregnancy. Prevention of neonatal tetanus can be accomplished by prenatally immunizing the mother. Un-immunized mothers should receive 2 doses of tetanus toxoid or Td at least 4 weeks apart; the 3rd dose should be given 6-12 months after the 2nd dose and preferably at least 2 weeks before the expected delivery date.
5. California law requires exclusion from school if immunization status is not in compliance with *California Code of Regulations*, Title 17.
6. Education of mothers, relatives, and attendants in the practice of strict asepsis of the umbilical stump of newborn infants.

DIAGNOSTIC PROCEDURES

Consult the Public Health Laboratory.