

# Tetanus Facts

University of Illinois at Urbana-Champaign • November 2006

## What is tetanus?

Also known as “lockjaw,” tetanus is an acute disease induced by a toxin produced by the tetanus bacteria, *Clostridium tetani*, which grows without oxygen at the site of an injury. The disease is characterized by painful muscle contractions, primarily of neck muscles, secondarily of trunk muscles, abdominal rigidity, and generalized spasms. History of an injury or apparent site of entry may be lacking. The case-fatality rate ranges from 10% to 90%, being highest in infants and the elderly, and varying inversely with the length of the incubation period and the availability of experienced health-care providers. The organism is rarely recovered from the site of infection, and usually there is no detectable antibody response.

The incubation period (time from exposure to onset of symptoms) is usually 3 to 21 days, although it may range from 1 day to several months, depending on the character, extent and location of the wound; the average is 10 days. Most cases occur within 14 days. In general, shorter incubation periods are associated with more heavily contaminated wounds, more severe disease and a worse prognosis.

## How common is tetanus?

Humans and animals harbor tetanus bacteria in their intestines. Tetanus spores (very resistant, dormant forms of the bacteria) are found commonly in the environment and can contaminate wounds of all types. Tetanus occurs worldwide but due to effective methods of prevention, it is sporadic and relatively uncommon in the U.S.A. and most developed countries. During 1998-2000, an average of 43 cases of tetanus was reported annually to the U.S. Centers for Disease Control and Prevention.

## How could I be exposed to tetanus?

Tetanus spores can be introduced into the body, usually through a puncture wound contaminated with soil, dust or animal or human feces; through cuts, burns and trivial or unnoticed wounds; or by injected contaminated street drugs. Tetanus occasionally follows surgical procedures. Cases have followed injuries considered too trivial for medical consultation. Tetanus is not directly transmitted from person to person. Recovery from tetanus may not result in immunity; second attacks can occur. Primary immunization is indicated even after recovery.

## How can I protect myself against tetanus?

Methods of control of tetanus include complete immunization with tetanus toxoid and intensive post-injury care and evaluation of puncture and other vulnerable wounds.

Tetanus vaccination. While immunization against tetanus is universally recommended regardless of a person's age, it is especially important for workers in contact with soil, sewage and domestic animals, members of the military forces, policemen and others with greater than usual risk of traumatic injury, and older adults who are currently at highest risk for tetanus and tetanus-related mortality.

Immunization against tetanus (with adsorbed tetanus toxoid) gives protection for at least 10 years. After the initial basic series has been completed, single booster doses elicit high levels of immunity. For adults, the tetanus toxoid is generally administered together with diphtheria toxoid. For a previously non-immunized individual, a primary series of 3 doses of adsorbed tetanus and diphtheria toxoids is given. The first 2 doses are given at 4 to 8 week intervals and the third dose 6 months to 1 year after the second dose. Active protection should be maintained by administering booster doses of the toxoids every 10 years.

For adults who are severely immunocompromised or infected with HIV, tetanus toxoid is indicated in the same schedule and dose as for immunocompetent persons even though the immune response may not be as strong.

Minor local reactions following tetanus toxoid injections are relatively frequent; severe local and systemic reactions are infrequent but do occur, particularly after excessive numbers of prior doses have been given.

Wound management. Evaluating the risk of tetanus occurring in patients with wounds is based on careful assessment of whether the wound is clean or contaminated, the immunization status of the patient, proper use of tetanus toxoid and/or human tetanus immune globulin (TIG), wound cleaning and, where required, surgical debridement and the proper use of antibiotics.

If you have been injured, wash your wound thoroughly with soap and water. Then, please refer to the Wound Assessment Checklist at the end of this document. If you answer “yes” to any of the questions or if you don't know when your last tetanus immunization was, or it has been more than ten years since your last tetanus immunization, then you should seek medical care. The information in the next few paragraphs will give you an idea of what type of medical treatment may be required. Your health-care provider will determine exactly what type of treatment is required for your case.

## Preventing Tetanus, continued

Persons who have been completely immunized previously and who sustain minor and uncontaminated wounds require a booster dose of tetanus toxoid only if more than 10 years have elapsed since the last immunization was given. For major and/or contaminated injuries, a single booster injection of a tetanus toxoid (preferably a combination of diphtheria and tetanus toxoid) should be administered promptly on the day of injury if the patient has not received tetanus toxoid within the preceding 5 years.

Persons who have not completed a full primary series of tetanus toxoid require a dose of toxoid as soon as possible following the wound and may be treated with TIG if it is a major wound and/or it is contaminated with soil containing animal excreta. An additional dose of tetanus toxoid may be used at the time of the wound, and ultimately, to complete the primary series. Treatment with TIG is indicated for patients with other than clean, minor wounds and a history of no, unknown, or fewer than three previous tetanus toxoid doses.

### What are university requirements regarding tetanus?

Animal users are required to read this information sheet and be offered, *at no charge*, the opportunity to receive the tetanus immunizations, if appropriate. **The Unit Head or Principal Investigator will incur the costs of any necessary immunizations.** Contact McKinley Health Center, Immunization and Travel Clinic at 333-2702 for schedule, cost and other information about receiving the immunization.

---

## W O U N D   A S S E S S M E N T   C H E C K L I S T

(Compiled from UIUC McKinley Health Center *Wound Assessment Center Checklist*)

**What was the year of your last TETANUS IMMUNIZATION? (If you do not know the year of your last tetanus immunization or if it has been greater than ten years, you must be evaluated by a health care professional, regardless of your answers to the following question).**

### IMMEDIATELY AFTER INJURY

1. Does the wound continue to bleed after applying direct pressure for 5 full minutes?
2. Is it a puncture wound occurring from a nail, pen or other sharp object?
3. Is it a gaping wound with skin edges widely opened or separated?
4. Is there a fatty layer, white tissue or muscle that is exposed from the wound?
5. Is there visible foreign material or possible material such as gravel, dirt, glass, or metal in the wound?
6. Is this wound caused by a burn or a human/animal bite?
7. Do you have a chronic medical condition such as diabetes or a bleeding disorder?

### WITHIN ONE TO TWO DAYS FOLLOWING INJURY

1. Have you noticed increased drainage, redness, pain or swelling surrounding the wound?
2. Is there a red line or streak extending from the wound or site of injury?
3. Is there any numbness or loss of movement below the wound?
4. Do you have a temperature above 100 degrees F?
5. Are you concerned about the cosmetic effects of your wound?
6. What was the year of your last TETANUS SHOT?

**If you have answered YES to any questions; if you are unsure about the year of your last tetanus shot; or, if you feel your wound needs professional evaluation for any reason, seek medical care immediately.**

---