

Fact Sheet

Tetanus

What causes tetanus?

Tetanus is caused by a toxin (poison) produced by a bacterium, *Clostridium tetani*. The *C. tetani* bacteria cannot survive in the presence of oxygen. They produce spores that are very difficult to kill as they are resistant to heat and many chemical agents.

How does tetanus spread?

C. tetani spores can be found in the soil and in the intestines and feces of many household and farm animals. The bacteria usually enter the human body through a puncture (in the presence of anerobic [low oxygen] conditions, the spores will germinate).

Tetanus is not spread from person to person.

How long does it take to show signs of tetanus after being exposed?

The incubation period varies from 3-21 days, with an average of eight days. The further the injury site from the central nervous system, the longer the incubation period. The shorter the incubation period, the higher the risk of death.

What are the symptoms of tetanus?

The symptoms of tetanus are caused by the tetanus toxin acting on the central nervous system. In the most common form of tetanus, the first sign is a locked jaw, followed by stiffness of the neck, difficulty in swallowing, and stiffness of the abdominal muscles.

Other signs include fever, sweating, elevated blood pressure, and rapid heart rate. Spasms often occur, which may last for several minutes and continue for 3-4 weeks. Complete recovery, if it occurs, may take months.

How serious is tetanus?

Tetanus has a high fatality rate: approximately 30% of reported cases result in death. As there is no good treatment for tetanus, the percentage of infected individuals dying from the disease has remained constant over the years in the United States.

What are possible complications from tetanus?

Laryngospasm (spasm of the vocal cords) is a complication that can lead to interference with breathing. Patients can also break their spine or long bones from convulsions. Other possible complications include hypertension, abnormal heart rhythm, and secondary infections, which are common because of prolonged hospital stays.

Obviously, the high possibility of death is a major complication.

How is tetanus diagnosed?

The diagnosis of tetanus is based on the clinical signs and symptoms only. Laboratory diagnosis is not useful as the *C. tetani* bacteria often cannot be recovered from the wound of an individual who has tetanus, and conversely, can be isolated from the skin of an individual who does not have tetanus.

What kind of injuries might allow tetanus to enter the body?

Tetanus bacilli live in the soil, so the most dangerous kind of injury involves possible contamination with dirt, animal feces, and manure.

Although we have traditionally worried about deep puncture wounds, in reality many types of injuries can allow tetanus bacilli to enter the body. In recent years, a higher proportion of cases had minor wounds than had major ones, probably because severe wounds were more likely to be properly managed. People have become infected with tetanus following surgery, burns, lacerations, abrasions, crush wounds, ear infections, dental infections, animal bites, abortion, pregnancy, body piercing and tattooing, and injection drug use. People can also get tetanus from splinters.

I stepped on a nail in our yard. What should I do?

Any wound that may involve contamination with tetanus bacilli should be attended to as soon as possible. Treatment depends on your vaccination status and the nature of the wound. In all cases, the wound should be cleaned. Seek treatment immediately and bring your immunization record with you.

With wounds that involve the possibility of tetanus contamination, a patient with an unknown or incomplete history of tetanus vaccination needs a tetanus/diphtheria shot (Td) and a dose of tetanus immune globulin (TIG) as soon as possible.

A person with a documented series of three Td (tetanus/diphtheria) doses who has received a booster dose within the last ten years should be protected. However, to ensure adequate protection, a booster dose of vaccine may still be given if it has been more than five years since the last dose and the wound is other than clean and minor.

Is there a treatment for tetanus?

There is no "cure" for tetanus once a person develops symptoms, just supportive treatment and management of complications. The best "treatment" is prevention through immunization.

How common is tetanus in the United States?

Tetanus first became a notifiable disease in the late 1940s. At that time, there were 500-600 cases reported per year. After the introduction of the tetanus vaccine in the mid-1940s, reported cases of tetanus dropped steadily. In recent years, about 40 cases have occurred each year in the United States.

Most cases have been among persons 50 years of age or older, although recently an increasing number of cases have been reported in younger persons, primarily injecting drug users.

Almost all cases of tetanus are in persons who have never been vaccinated, or who completed their childhood series, but did not have a booster dose in the preceding 10 years.

What is neonatal tetanus?

Neonatal tetanus is a form of tetanus that occurs in newborn infants, most often through the use of an unsterile cutting instrument on the unhealed umbilical stump. These babies usually have no temporary immunity passed on from their mother because their mother hasn't been vaccinated and therefore has no immunity.

Neonatal tetanus is very rare in the United States (two cases reported since 1989), but is common in some developing countries. It causes more than 270,000 deaths worldwide per year.

Can you get tetanus more than once?

Yes! Tetanus disease does not cause immunity because so little of the potent toxin is required to cause the disease. Persons recovering from tetanus should begin or complete the vaccination series.

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This fact sheet is for information only and is not meant to be used for self-diagnosis or as a substitute for consultation with a health care provider. If you have any questions about the disease described above or think that you may have this infection, consult a health care provider.

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