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Topic: Tetanus

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Tetanus (Lockjaw)

What is tetanus?

Tetanus is a serious bacterial infection that affects the nervous system and causes muscles throughout the body to tighten. It's also called lockjaw because the infection often causes muscle contractions in the jaw and neck. However, it can eventually spread to other parts of the body.

Tetanus infection can be life-threatening without treatment. Approximately 10 to 20 percent of tetanus infections are fatal, according to the Centers for Disease Control and Prevention (CDC).

Tetanus is a medical emergency that requires immediate treatment in a hospital. Fortunately, tetanus is preventable through the use of a vaccine. However, this vaccine does not last forever. Tetanus booster shots are needed every 10 years to ensure immunity.



Causes

Bacteria called *Clostridium tetani* cause tetanus. Spores of the bacteria can be found in dust, dirt, and animal droppings. Spores are small reproductive bodies produced by certain organisms. They're often resistant to harsh environmental conditions, such as high heat.

A person can become infected when these spores enter the bloodstream through a cut or deep wound. The bacteria spores then spread to the central nervous system and produce a toxin called tetanospasmin. This toxin is a poison that blocks the nerve signals from your spinal cord to your muscles. This can lead to severe muscle spasms.

Tetanus infection has been associated with:

crush injuries

injuries with dead tissue

burns

puncture wounds from piercings, tattoos, injection drug use, or injury (such as stepping on a nail)

wounds contaminated with dirt, feces, or saliva

Less commonly, it's been associated with:

animal bites

dental infections

insect bites

chronic sores and infections

Tetanus is not contagious from person to person. The infection occurs worldwide, but is more common in hot, damp climates with rich soil. It's also more common in densely



Symptoms

Tetanus affects the nerves that control your muscles, which can lead to difficulty swallowing. You may also experience spasms and stiffness in various muscles, especially those in your jaw, abdomen, chest, back, and neck.

Other common tetanus symptoms are:

fast heart rate

fever

sweating

high blood pressure

The incubation period — the time between exposure to the bacteria and the onset of illness — is between 3 and 21 days. Symptoms typically appear within 14 days of initial infection. Infections that occur faster after exposure are typically more severe and have a worse prognosis.

How it's diagnosed

Your doctor will perform a physical exam to check for symptoms of tetanus, such as muscle stiffness and painful spasms.

Unlike many other diseases, tetanus is not generally diagnosed through laboratory tests. However, your doctor may still perform lab tests to help rule out diseases with similar symptoms. These include meningitis, a bacterial infection that affects the brain and spinal cord, or rabies, a viral infection that causes brain swelling.

Your doctor will also base a tetanus diagnosis on your immunization history. You're at a higher risk of tetanus if you haven't been immunized or if you're overdue for a booster shot.

Treatment

Treatment depends on the severity of your symptoms. Tetanus is typically treated with a variety of therapies and medications, such as:

- antibiotics such as penicillin to kill the bacteria in your system
- tetanus immune globulin (TIG) to neutralize the toxins that the bacteria have created in your body
- muscle relaxers to control muscle spasms
- a tetanus vaccine given along with the treatment
- cleaning the wound to get rid of the source of the bacteria

In some cases, a surgical procedure called debridement is used to remove dead or infected tissue. If you have difficulty swallowing and breathing, you may need a breathing tube or ventilator (a machine that moves air in and out of the lungs).



Prevention

Vaccination can prevent tetanus infections, but only if you receive your booster shots on schedule. In the United States, the tetanus vaccine is given to children as part of the diphtheria-tetanus-pertussis shot, also called the DTap shot. This is a three-in-one vaccine that protects against diphtheria, pertussis, and tetanus. However, it doesn't provide lifelong protection. Children need to get a booster shot at 11 or 12 years of age. Adults then need a booster vaccine called the Td vaccine (for tetanus and diphtheria) every 10 years after that. Check with your doctor if you aren't sure if you're up to date on your shots.

Proper treatment and cleaning of wounds can also help prevent the infection. If you're injured outside and think your injury has made contact with soil, call your healthcare provider and ask about your risk of tetanus.



What is the outlook for people with tetanus?

Without treatment, tetanus can be fatal. Death is more common in young children and older adults. According to the CDC, roughly 11 percent of reported cases of tetanus have been fatal in recent years. This rate was higher in people who were older than 60 years, reaching 18 percent. In people who were unvaccinated, 22 percent of cases were fatal.

Prompt and proper treatment will improve your outlook. Go to your doctor or emergency room right away if you think you may have tetanus. Even if you get tetanus once, you can still get it again someday if you're not protected by the vaccine.

The vaccine is extremely effective, according to the CDC. Reports of tetanus occurring in fully immunized people who have received a vaccine or booster within the last 10 years are very rare.