

QUESTIONS & ANSWERS

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The Children's Hospital of Philadelphia®



VACCINE EDUCATION CENTER

Tetanus

What is tetanus?

Tetanus is an infection caused by the bacterium *Clostridium tetani*, which is commonly found in soil. The bacteria release a toxin, or poison, that causes muscle spasms.

How is tetanus spread?

Tetanus is unique among vaccine-preventable diseases because it is not spread from person to person. Instead people are exposed when tetanus spores enter their bloodstream, most often through an open wound or nonsterile injections, such as from body piercings, tattoos or injection of illegal drugs. In developing countries, cases of tetanus are also common in infants delivered in unclean environments or following procedures such as circumcision. Tetanus can infect someone through a wound, such as a puncture, cut or burn, but also through less commonly considered wounds, such as skin ulcers, scrapes, or insect or animal bites.

What are the symptoms of tetanus?

The average incubation period for tetanus is about one week but can be as long as two to four months. In most cases, symptoms begin within three days to three weeks. Interestingly, the incubation period varies depending on the location of the wound relative to the central nervous system with longer distances translating to later onset. Typically, one of the first symptoms of tetanus is a locked jaw, which is the source of its alternative name, lockjaw. Muscle spasms can then disperse to lower regions like the chest, back and abdominal muscles. The back spasms can cause the characteristic arching associated with tetanus. These constant spasms can cause severe damage leading to fractures and muscle tears. Other symptoms of the disease can include fever, irritability, uncontrolled bowel movement, and trouble swallowing and breathing.



Can tetanus be treated?

If caught early, tetanus can be treated with a combination of antibodies to tetanus (passive immunization), antibiotics (such as metronidazole) and muscle relaxers. If treatment is delayed or tetanus is more severe, ventilation and intravenous infusions of antibiotics, antibodies and muscle relaxers are often required. Death can occur as quickly as four days. About 2 of every 10 infected people will die if not treated.

Information provided by the Vaccine Education Center at The Children's Hospital of Philadelphia

vaccine.chop.edu

Tetanus *continued*

Is there a tetanus vaccine?

Yes. Because the damage from tetanus results from the toxin, the tetanus vaccine consists of toxoid, or inactivated toxin, that induces immunity without causing symptoms.

Does the tetanus vaccine work?

The tetanus vaccine is quite effective in preventing disease; however, because immunity fades over time, people are typically recommended to get booster doses every 10 years. Since introduction of the tetanus vaccine, the average number of cases in the United States is 41 per year with about four deaths.

Who should get the tetanus vaccine?

The tetanus vaccine is combined with diphtheria and, often, pertussis vaccines. Infants are recommended to receive five doses of the DTaP combination vaccine at ages 2 months, 4 months, 6 months, 15 – 18 months and 4 – 6 years.

Another version, known as Tdap, is recommended for adolescents and adults for a single dose and then a Td vaccine every 10 years thereafter. The exception is expectant mothers who should receive the Tdap vaccine during the third trimester of *every* pregnancy. This recommendation is not related to the tetanus component, but rather is meant to protect the baby against pertussis before the child is old enough to get the DTaP series.

Why are booster doses of the tetanus vaccine necessary?

Tetanus boosters are recommended to rejuvenate waning immunity levels in some individuals.

Is the tetanus vaccine safe?

The vaccine is extremely safe. Though, as with any vaccine, a slight fever or mild reactions including pain, redness or swelling can occur where the vaccine was given.

