Dear Alice,

If you step on a nail and have not had a tetanus shot in the last five years, how soon should a person be vaccinated? 24 hours? 48 hours?

Answer

Dear Reader,

Although rusty metal has become synonymous with tetanus, stepping on a nail isn’t necessarily enough to send you running (well, more likely hobbling) to get a tetanus shot. While tetanus is a serious bacterial disease, there are many factors to consider and symptoms to look for when determining whether or not you need a vaccination. That being said, health professionals recommend that adults receive tetanus boosters at least every ten years, as preventing tetanus is much easier than curing it once infected. If you step on a nail and haven’t had a tetanus booster in the last five years (or if you’re a little rusty on when your last booster was), visiting your health care provider to get it checked out is recommended. It’s best to seek treatment sooner rather than later (preferably within 48 hours) to increase your chances of treatment if, in fact, you’re infected. Even if you’re still concerned, despite knowing the date of your last tetanus shot, having your medical provider take a look may provide some peace of mind.

There seems to be a misconception about tetanus — it isn’t the rust that causes the infection, rather it’s a type of bacteria, *Clostridium tetani*, that’s on the rusty nail that causes the infection. This bacterium is ubiquitous in the natural environment — spores lurk in soil, dust, and in animal intestines and feces. The rusty nail scenario isn’t the only way this disease spreads. Any deep puncture can become infected with *Clostridium tetani*, as can burns, torn flesh, punctures from needles during drug use, animal bites and scratches, or other wounds contaminated with human and animal feces or saliva.

Once the bacterium finds its way into the body, it may produce a toxin that spreads systemically. It also interferes with the central nervous system, producing muscle stiffness, rigidity, or spasms. For those that suspect they’ve been exposed to tetanus, there are a number of symptoms to watch out for — the most frequent symptom is a stiff jaw, followed by a stiff neck, and then muscular stiffness and spasms throughout the body. Other symptoms include difficulty
swallowing, restlessness and irritability, fever, headache, and sore throat. More serious complications include broken bones (due to involuntary spasms), pneumonia, difficulty breathing, cardiac arrest, and death. Symptoms may be localized, with muscle contractions in the part of the body where the infection began, or they may be generalized, affecting the whole body. Tetanus symptoms appear anywhere from a few days to several weeks after the tetanus bacteria enters the body.

A diagnosis of tetanus based on a physical exam, looking for tell-tale signs such as muscle spasms, stiffness, and pain. Currently, laboratory tests are unable to diagnose tetanus. Once diagnosed, a treatment plan may consist of medications such as a tetanus antitoxin, which neutralizes any toxin that hasn't yet combined with nerve tissue, or antibiotics, which are used to fight tetanus bacteria in the body. With tetanus mortality rates as high as 25 percent in the United States and 50 percent worldwide, prevention via vaccination is especially critical — it’s easy and close to 100 percent effective. In fact, almost all cases of tetanus have occurred in people who’ve never been immunized or who haven’t had a tetanus booster shot within the preceding ten years.

The tetanus vaccination works by causing the body to respond to an inactivated form of the tetanus toxin, thereby developing antibodies. The vaccine is usually given to children as part of the diphtheria, tetanus, and pertussis (DTaP) shot. After the initial series of shots, it’s recommended that adolescents get a booster shot between the ages of 11 and 18, and that adults receive a tetanus booster every ten years. It’s best to make sure your booster is up-to-date when traveling internationally, as tetanus may be more common and treatment may be less accessible overseas.

So, Reader, if the wound is deep or if a person’s vaccination status is at all questionable, it may be worth a visit to a health care provider. For those who are certain their vaccinations are up to date and if the puncture is small, it may be safe to just clean the wound, treat it with antibiotic ointment, keep it covered and clean, and be on the lookout for any symptoms that could point to signs of a tetanus infection.

As the saying goes, it's better to be safe than sorry; so staying current with your tetanus vaccine is wise. You'll be more likely to avoid an infection if you happen to cut yourself on a sharp and dirty surface, and you'll avoid the mad dash to your health care provider's door.

Alice!

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