HIV from a needle stick? [1]

Dear Alice,

What are your chances of getting HIV, or any other disease, from a needle prick on the finger? (The needle had just been used to collect tubes of blood from a patient, set on the table, and pricked you.)

Answer

Dear Reader,

Great question! It’s wise to be in the know about workplace health risks. The Centers for Disease Control and Prevention (CDC) estimates that approximately 385,000 sharps-related injuries (i.e., being stuck by a needle) occur in health care workers each year in the United States. But, fear not! There are things you can do to prevent a needlestick injury from happening (more on this later)! Getting back to your question about Human Immunodeficiency Virus (HIV); according to the CDC, if a person is stuck by a needle with HIV-positive fluid on it, approximately 2.3 out of 1,000 individuals, if untreated, will become infected with HIV. So, the odds of being infected with HIV from a needlestick injury are less than one percent. Interested in more stats about possible disease transmission and what to do if you are accidently stuck? Read on!

There are two types of injuries that could place a health care worker at risk: a percutaneous injury (i.e., being stuck by a needle or cut with a sharp object) or a mucus membrane injury (i.e., exposed skin that is chapped, scraped, or afflicted with dermatitis). And, as you suggested, injuries may expose health care workers to a range of blood-borne pathogens including, but not limited to, HIV [2], hepatitis B [3], and hepatitis C [4]. Risk of transmission can increase if the needle is visibly bloody, if the procedure involved placing the needle in one of the patient’s veins or arteries, or if it was a deep injury.

Occupational (work-related) exposure from an HIV-positive source isn’t very common. To be more specific, the rate of occupational transmission from an HIV-positive source is about 0.3 percent for a percutaneous exposure and 0.09 percent for a mucus membrane exposure. So, the chances of HIV transmission are pretty low. You also mentioned other diseases; the risk of infection for hepatitis B following an accidental needlestick injury is about 22 to 31 percent, though the likelihood of infection may vary depending on the health care worker’s vaccination status. The risk for hepatitis C infection following a needlestick injury is about 1.8 percent.

What can you do if you’re stuck? Although infection is fairly uncommon, it may still be helpful
to know the immediate and long-term steps you can take in the event of an accidental stick. Following a needlestick injury, it's recommended that you:

- Wash the site with hot soap and water
- Contact a supervisor for support and documentation of the incident
- Seek medical treatment

Adapted from the CDC [6].

It may be recommended that you get tested for HIV and other blood-borne pathogens as this is the only way to know for sure whether or not you have been infected. Your health care provider might also recommend beginning a regimen of post-exposure prophylaxis (PEP) [7] medication for HIV or for Hep B [8] (there is currently no PEP for Hep C) as soon as possible after the prick.

How can you prevent this from happening in the first place? Consider these preventative measures:

- Use barriers such as gloves and goggles.
- Wash your hands [9] and skin following contact with blood or body fluids.
- Be extra careful when handling and disposing of sharp instruments.
- Speak with their supervisor about specific workplace policies and procedures regarding these types of injuries.

Adapted from the CDC [10].

While risk of transmission may be low, employing strategies to prevent needlesticks in the first place and utilizing secondary prevention in the event of injury can further minimize any risks to your health. Here’s to keeping yourself out of a stick-y situation!

Alice!
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