

OSHA Training Toolbox Talk: Biological Hazards – The Role of Vaccines in Preventing Infections

[Reference: Paragraph (5)(a)(1) of OSHA Act of 1970 / Centers for Disease Control & Prevention (CDC) Guidelines]

Vaccines can help to prevent contracting various diseases that can make us ill, or that may even lead to death. Vaccines can reduce the risk of infection by working with the body's natural defense system to develop antibodies that fight specific disease-causing viruses, bacterium, or other infectious agents.

As discussed in earlier toolbox talks, certain bacteria or viruses may invade your body and then multiply, and that could eventually lead to the development of an infectious disease. The first time your body encounters a specific type of bacterium or virus, it typically reacts by creating specific types of white blood cells that attack the invading agent. It may take several days for your body's immune system to generate enough of these special white blood cells to adequately control the infection. After the infection has subsided, your immune system retains special types of white blood cells that are programmed to quickly react if the body encounters the same infectious agent again.

Vaccines work to develop immunity by imitating an infection caused by a specific infectious agent. This simulated infection causes your body to create the special white blood cells needed to quickly react should the agent of concern ever get into your system. Be aware that it is normal to expect that after getting a vaccine, you may develop one or more minor symptom, such as soreness at the injection site or other muscles, sore joints, a headache, or a fever. But these minor symptoms are typically not a concern, as they are normal to experience as the vaccine works to build up its immunity to future infection.

Be aware that it usually takes some time for a vaccine to produce the desired level of protection from an infectious agent, perhaps even a couple of weeks. Therefore, it is possible that a recently-vaccinated person could still contract that disease because the vaccine has not had time to do its job. That explains why some people who received a vaccine will still become infected soon after they got vaccinated.

With some vaccines, a single inoculation will provide a sufficient level of protection against infection. But with many types of vaccines, it is necessary to administer a series of injections, perhaps two, three, or even more, to build up adequate immunity over time. In other cases, a booster shot may be necessary after a number of years have passed to help maintain the desired level of protection. And in cases where different strains of a virus evolve, such as influenza, or where a virus quickly mutates, a new vaccine must be developed and administered every year or so.

Unfortunately, there is not a vaccine available for all infectious diseases; for example, there is no vaccine available for the common cold. However, there are many vaccines that are available to help prevent relatively common diseases, including some from exposures to infectious agents that could occur at work. These include, but are not limited to, vaccines for Hepatitis A and B, Tetanus, various Flu viruses, and the Corona virus. There are also special vaccines administered on a limited basis to protect against relatively less common infectious agents that cause Tuberculosis, Cholera, and Rabies.

Last but not least, there are some members of the population who, due to age, allergies, disease, or other underlying health conditions, have a weakened immune system. In those cases, their health care provider could very likely advise against their receiving a vaccine, at least until their condition can be controlled.

Are there any questions about today's toolbox talk on how vaccinations can help us avoid contracting an infectious disease? Thank you for your attendance today. Please be sure that to sign the training certification form to get credit for attending today's toolbox training session.

