

Understanding Skin Test for Tuberculosis

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The tuberculosis skin test is done in order to screen people for infection with tuberculosis. Tuberculosis is a disease caused by the bacteria called *Mycobacterium Tuberculosis*, which primarily infects the lungs (Refer to previous USI News publication on Tuberculosis). The test is also called purified protein derivative standard (PPD), TB test by many people, and Tuberculin skin test. Old tests used to screen for TB include the Tine test.

Why is PPD test performed?

To screen for exposure and infection of the bacteria causing Tuberculosis, the principle behind the test is the ability of special body cells (immune cells- T lymphocytes) to recognize and react to protein materials similar to that from the previous exposure to the bacteria causing TB. The test solution used has processed extracts from the organism. These extracts are not capable of causing the disease, but can be recognized by body cells.

How is PPD test performed?

It is usually done in the forearm, away from any skin lesions and blood vessels. About 0.1mls of 5 tuberculin units is injected just below the skin of the forearm after cleaning. When properly done, a small bleb (small elevation of skin around the injection) forms immediately, which soon disappears.

What do you do after the test?

There is nothing special to do. You should avoid rubbing or scratching the site. The site does not have to be covered. You need to go back to your health care provider to have the test read within 48 to 72 hours.

How is the test interpreted?

What to look for is the presence of a hard swelling (induration) around the site of injection. The person reading the test runs a finger over the area to feel for the swelling. The size of the induration is measured in millimeters as the measurement is used to interpret the result of the test. Simple redness without swelling is not considered as positive.

Positive result is based on the following measurement of the induration or presence of blisters

Size of swelling (induration)

Group of individuals

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5mm or more

HIV positive, organ transplants, contact with someone who had TB, if X-RAY shows changes consistent with TB

10mm or more

Immigrants from high prevalence area who are less than 5 years in USA, health care workers, injection drug users

15mm or more

In people who are not high risk for contacting TB

Negative Test: No swelling noted at test site or swelling less than above measurements.

False positive reaction: People who truly are not infected with TB having a reaction. Some of the reasons include:

- Infection from other similar bacterial other than the one causing TB

- Previous BCG vaccination

- Improperly done or read test

False negative test: people who truly have been infected with TB causing bacteria but whose tests are negative. Reasons for such include:

- Infection within 8-10 weeks

- Overwhelming TB infection

- Very old TB infection

- If you received a live virus (measles and small pox) recently

- Improper testing or reading.

What do I do if I my test result is positive?

You will be required to do a chest X Ray to make sure you do not have active Tuberculosis. If X Ray is normal, such people are said to have latent tuberculosis infection (LTBI). It means they do not have active tuberculosis. They, however, have been exposed sometime and have the potential of developing active tuberculosis down the line. Such people are offered preventive medication called Isoniazid (INH). You can get free testing and treatment from the Department of Health.

What is second step PPD Testing?

In a long term infection, the ability to react to the TB antigen may decrease over time. When given the first test this people may be false negative. The first test stimulates the immune system but does not mount a positive reaction. When the test is repeated soon afterwards, usually done from 1 week upward, the second test boosts the response of the immune system and will be positive in people who are truly infected with the TB bacteria. Repeating the test does not affect the result in someone who was never infected.

Live vaccinations and TB skin testing.

PPD test can be done on the same day as when receiving a live virus vaccine or otherwise wait four to six weeks.

BCG vaccine and TB skin test

BCG vaccine is usually given to children in many countries with high prevalence of TB. It does not give absolute protection against TB. The effect of BCG vaccination wanes over five to ten years. Previous BCG vaccination may result into a positive test, giving rise to a decision to give preventive medications or not. It is recommended that results of TB test be treated in the same way in people who have received BCG vaccination and those who have not.

A special test is are now available and it is known as the Quantiferon gold standard test, which BCG does not interfere with usually. This is only done in special cases to confirm infection with the TB bacterial when there is some doubt; it is not a routine test.

Take Home Message

TB skin test is widely available and freely offered by the department of Health. Seize the opportunity to be tested. If you have LTBI it is better to take the preventive medicine as prevention is always better than cure. You do not have to remember a definite time that you think you were exposed to TB especially if you come from a country with high prevalence. BCG vaccination does not give absolute protection against tuberculosis. People with previous BCG vaccination are treated the same way as those who were never vaccinated.

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This article is for educational purpose and it is not intended to replace the advice of your doctor.