### What is it?

The Mantoux tuberculin skin test (TST) is the standard method of determining whether a person is infected with *Mycobacterium tuberculosis*. Reliable administration and reading of the TST requires standardization of procedures, training, supervision, and practice.

### How is the TST Read?

The skin test reaction should be read between 48 and 72 hours after administration. A patient who does not return within 72 hours will need to be rescheduled for another skin test.

The reaction should be measured in millimeters of the induration (palpable, raised, hardened area or swelling). The reader should not measure erythema (redness). The diameter of the indurated area should be measured across the forearm (perpendicular to the long axis).

### How is the TST Administered?

The TST is performed by injecting 0.1 ml of tuberculin purified protein derivative (PPD) into the inner surface of the forearm. The injection should be made with a tuberculin syringe, with the needle bevel facing upward. The TST is an intradermal injection. When placed correctly, the injection should produce a pale elevation of the skin (a wheal) 6 to 10 mm in diameter.

### How Are TST Reactions Interpreted?

Skin test interpretation depends on two factors:

- Measurement in millimeters of the induration
- Person’s risk of being infected with TB and of progression to disease if infected

### Classification of the Tuberculin Skin Test Reaction

<table>
<thead>
<tr>
<th>An induration of <strong>5 or more millimeters</strong> is considered positive in:</th>
<th>An induration of <strong>10 or more millimeters</strong> is considered positive in:</th>
<th>An induration of <strong>15 or more millimeters</strong> is considered positive in anyone, including persons with no known risk factors for TB. However, targeted skin testing programs should only be conducted among high-risk groups.</th>
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</thead>
<tbody>
<tr>
<td>• HIV-infected persons</td>
<td>• Recent immigrants (&lt; 5 years) from high-prevalence countries</td>
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<td>• A recent contact of a person with TB disease</td>
<td>• Injection drug users</td>
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<td>• Persons with fibrotic changes on chest radiograph consistent with prior TB</td>
<td>• Residents and employees of high-risk congregate settings</td>
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<td>• Patients with organ transplants</td>
<td>• Mycobacteriology laboratory personnel</td>
<td>• Children &lt; 4 years of age</td>
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<td>• Persons who are immunosuppressed for other reasons (e.g., taking the equivalent of &gt;15 mg/day of prednisone for 1 month or longer, taking TNF-alpha antagonists)</td>
<td>• Persons with clinical conditions that place them at high risk</td>
<td>• Infants, children, and adolescents exposed to adults in high-risk categories</td>
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</table>
Who Can Receive a TST?

Most persons can receive a TST. TST is contraindicated only for persons who have had a severe reaction (e.g., necrosis, blistering, anaphylactic shock, or ulcerations) to a previous TST. It is not contraindicated for any other persons, including infants, children, pregnant women, persons who are HIV-infected, or persons who have been vaccinated with BCG.

How Often Can TSTs Be Repeated?

In general, there is no risk associated with repeated tuberculin skin test placements. If a person does not return within 48-72 hours for a tuberculin skin test reading, a second test can be placed as soon as possible. There is no contraindication to repeating the TST, unless a previous TST was associated with a severe reaction.

What is a Boosted Reaction?

In some persons who are infected with M. tuberculosis, the ability to react to tuberculin may wane over time. When given a TST years after infection, these persons may have a false-negative reaction. However, the TST may stimulate the immune system, causing a positive, or boosted reaction to subsequent tests. Giving a second TST after an initial negative TST reaction is called two-step testing.

Why is Two-Step Testing Conducted?

Two-step testing is useful for the initial skin testing of adults who are going to be retested periodically, such as health care workers or nursing home residents. This two-step approach can reduce the likelihood that a boosted reaction to a subsequent TST will be misinterpreted as a recent infection.
Can TSTs Be Given To Persons Receiving Vaccinations?

Vaccination with live viruses may interfere with TST reactions. For persons scheduled to receive a TST, testing should be done as follows:

- Either on the same day as vaccination with live-virus vaccine or 4-6 weeks after the administration of the live-virus vaccine
- At least one month after smallpox vaccination

Additional Information


CDC. Mantoux Tuberculin Skin Test: Training Materials Kit.