

# Mantoux tuberculin skin test

## 1 Administration

For each patient, conduct a risk assessment that takes into consideration recent exposure, clinical conditions that increase risk for TB disease if infected, and the program's capacity to deliver treatment for latent TB infection to determine if the skin test should be administered.

### 1 Locate and clean injection site



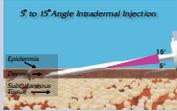
- 2 to 4 inches below elbow joint
- Place forearm palm side up on a firm, well-lit surface
- Select an area free of barriers (e.g., scars, sores) to placing and reading
- Clean the area with an alcohol swab

### 2 Prepare syringe



- Check expiration date on vial and ensure vial contains tuberculin (5 TU per 0.1 ml)
- Use a single-dose tuberculin syringe with a 1/4- to 1/2-inch, 27-gauge needle with a short bevel
- Fill the syringe with 0.1 ml of tuberculin

### 3 Inject tuberculin



- Insert slowly, bevel up, at a 5- to 15-degree angle



- Needle bevel can be seen just below skin surface



- After injection, a tense, pale wheal should appear over the needle

### 4 Check skin test



- Wheal should be 6 to 10 mm in diameter. If not, repeat test at a site at least 2 inches away from original site

### 5 Record information

- Record all the information required for documentation by your institution (e.g., date and time of test administration, injection site location, lot number of tuberculin)

## 2 Reading

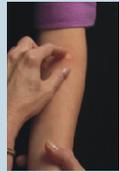
The skin test should be read between 48 and 72 hours after administration. A patient who does not return within 72 hours will probably need to be rescheduled for another skin test.

### 1 Inspect site



- Visually inspect site under good light
- Erythema (reddening of the skin) – do not measure
- Induration (hard, dense, raised formation)

### 2 Palpate induration



- Use fingertips to find margins of induration

### 3 Mark induration



- Use fingertip as a guide for marking widest edges of induration across forearm

### 4 Measure induration (not erythema)



- Place "0" ruler line inside left dot edge
- Read ruler line inside right dot edge (use lower measurement if between two gradations on mm scale)

### 5 Record measurement of induration in mm

- If no induration, record as 0 mm
- Do not record as "positive" or "negative"
- Only record measurement in mm

## 3 Interpretation

Skin test interpretation depends on two factors:

- Measurement in millimeters (mm) of the induration
- Person's risk of being infected with TB and progression to disease if infected

The three cut points below should be used to determine whether the skin test reaction is positive. A person with a positive reaction should be referred for a medical evaluation for latent TB infection and appropriate follow-up and treatment if necessary. A measurement of 0 mm or a measurement below the defined cut point for each category is considered negative.

### Induration of $\geq 5$ mm is considered positive in

- Human immunodeficiency virus (HIV)-infected persons
- Recent contacts of TB case patients
- Persons with fibrotic changes on chest radiograph consistent with prior TB
- Patients with organ transplants and other immunosuppressed patients (e.g., receiving the equivalent of  $\geq 15$  mg/d of prednisone for 1 month or more)

### Induration of $\geq 10$ mm is considered positive in

- Recent immigrants (i.e., within the last 5 years) from countries with a high prevalence of TB
- Injection drug users
- Residents and employees\* of the following high-risk congregate settings:
  - prisons and jails
  - nursing homes and other long-term facilities for the elderly
  - hospitals and other health care facilities
  - residential facilities for patients with acquired immunodeficiency syndrome (AIDS)
  - homeless shelters
- Mycobacteriology laboratory personnel
- Persons with the following clinical conditions that place them at high risk:
  - silicosis
  - diabetes mellitus
  - chronic renal failure
  - some hematologic disorders (e.g., leukemias and lymphomas)
  - other specific malignancies (e.g., carcinoma of the head, neck, or lung)
  - weight loss of  $\geq 10\%$  of ideal body weight
  - gastrectomy
  - jejunioleal bypass
- Children <5 years of age
- Infants, children, and adolescents exposed to adults at high risk for developing active TB

### Induration of $\geq 15$ mm is considered positive in

- Persons with no known risk factors for TB

\* For employees who are otherwise at low risk for TB and who are tested as part of an infection control screening program at the start of employment, a reaction of  $\geq 15$  mm is considered positive. Some health care workers participating in an infection control screening program may have had an induration  $>0$  mm that was considered negative at baseline. If these health care workers have an increase in induration size upon subsequent testing, they should be referred for further evaluation.

Note: Reliable administration and reading of the tuberculin skin test involves standardization of procedures, training, supervision, and practice. Always follow your institution's policies and procedures regarding infection control, evaluation, and referral. Also remember to provide culturally appropriate patient education before and after administration, reading, and interpretation of the skin test.

For more information on tuberculosis, visit [www.cdc.gov/tb](http://www.cdc.gov/tb)



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