



Clinical Practice Guideline

TITLE: ADMINISTRATION OF THE TUBERCULIN SKIN TEST (TST)

APPROVED BY:

		Date		TARGET REVIEW DATE	PAGE
		<input type="checkbox"/> WRHA TB team			
		<input checked="" type="checkbox"/> TB working group	April 2015		
		<input type="checkbox"/> Population and Public Health			

PURPOSE:

To promote consistency and competency in administering the tuberculin skin test (TST) using the Mantoux technique.

SCOPE & GOAL:

Public Health Nurses (PHNs) will consistently and accurately administer tuberculin skin tests (TST).

DEFINITIONS

Tuberculin skin test – The intradermal administration of tuberculin purified protein derivative (PPD) to test for a cell mediated reaction to tuberculosis antigens within 48 to 72 hours. In Manitoba, the tuberculin purified protein product used is called Tubersol®.

BACKGROUND

The TST is the primary tool to diagnose tuberculosis (TB) infection. Infection can usually be identified with a tuberculin skin test three to eight weeks following exposure to the initial infection. Accurate administration and reading of the TST can contribute to the early identification of active cases, which is a main priority in the prevention and control of TB.



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PROCEDURE

1. The following supplies are needed:
 - 1.1 A 0.6 to 1.3 cm (1/4 to 1/2 inch) 26- or 27-gauge needle with a disposable plastic tuberculin syringe
 - 1.2 Purified protein derivative 5 Tuberculin Units (5-TU) (0.1 ml) that has been properly stored and handled
http://www.wrha.mb.ca/professionals/immunization/files/03_CPG_StorageOffSite.pdf
 - 1.3 Anaphylaxis kit(s)¹
 - 1.4 Alcohol swabs
 - 1.5 Gauze or cotton balls
 - 1.6 Hand sanitizer
 - 1.7 A comfortable location where the person can be seated with their arm extended
- 2 Preparation for the TST
 - 2.1 Complete the health history to determine it is safe to proceed with the TST(link)
http://www.phac-aspc.gc.ca/tbpc-latb/pubs/tb-canada-7/tb-standards-tb-normes-ch4-eng.php#a5_2
 - 2.1.1 The TST **should not** be done when the client has
 - 2.1.1.1 A history of a previous severe or blistering reaction
 - 2.1.1.2 Documented history of active tuberculosis
 - 2.1.1.3 Documented history of previous positive TST
 - 2.1.1.4 Extensive burns or eczema over the TST site
 - 2.1.1.5 A major viral infection
 - 2.1.1.6 A vaccination with a live virus in the past 4 weeks **except** if there may not be another opportunity to administer the TST. Live vaccines are associated with a theoretical risk of a false-negative TST result.
 - 2.1.2 It is **safe to proceed** with the TST for an individual who

¹ Acute allergic reactions, including anaphylaxis, angioedema, urticaria and/or dyspnea, have been very rarely reported following skin testing. These reactions may occur in persons without a prior history of a TST. Refer to Manitoba Health policy on management of anaphylaxis.



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- 2.1.2.1 Has a common cold
- 2.1.2.2 Is pregnant or breast-feeding
- 2.1.2.3 Has had any vaccine on same day, however would be preferable to give the vaccines on the day of the reading, not the day of planting.
- 2.1.2.4 Was immunized in the past 4 weeks with vaccines that were not live
- 2.1.2.5 Gives a history of a positive TST reaction (other than blistering) that was not documented
- 2.1.2.6 Is taking low doses of systemic corticosteroids, less than 15 mg prednisone or equivalent daily

3. Explain the TST procedure to the client and advise:
 - 3.1 The TST must be read within 48-72 hours by a health professional
 - 2.1.1 They should stay for 15 minutes following administration of the TST to reduce risks associated with an anaphylactic reaction
 - 2.1.2 Following the TST, there may be some minor discomfort or itchiness at the site
 - 2.1.3 The site should not be scratched or covered with a bandage
 - 2.1.4 Cool clothes or ice can be used
 - 2.1.5 All normal activities including showering or bathing are safe
 - 2.1.6 Anesthetic creams should be avoided as they can produce localized edema and interfere with the TST result
 - 2.2 Draw up 0.1 ml of of 5-TU (Tuberculin Units) of tuberculin purified protein derivative in the 26- or 27-gauge syringe
 - 2.2.1 It is not necessary to inject air into the vial prior to withdrawal of tuberculin purified protein derivative
 - 2.2.2 Syringes should not be preloaded for later use, or tuberculin purified protein derivative solution transferred from one container to another, as this may reduce potency



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2.3 Seat the person so they are comfortable with their arm extended while explaining the procedure

2.3.1 Use the inner forearm of the nondominant arm, about 10 cm (4 inches) below the elbow

2.3.2 Avoid areas with abrasions, swelling, rashes, burns, eczema, lesions, or visible veins

2.3.3 If neither forearm is suitable, the outside of the forearm or the upper arm can be used

2.4 Administer 0.1 mL of 5-TU (Tuberculin Units) PPD by **intra**dermal injection

2.4.1 Position the bevel of the needle so that it faces up

2.4.2 Hold the skin on the inner forearm taut

2.4.3 Insert the needle at a 5-15 degree angle until the entire bevel is covered. The tip of the needle will be visible just below the surface of the skin

2.4.4 Slowly administer the PPD intradermally by injecting the full 0.1 mL of Tuberculin until the safety mechanism on the needle activates.

2.4.5 Do not aspirate

2.4.6 Assess for a discrete, pale elevation of the skin (a wheal) at the injection site

2.4.6.1 The wheal should be about 6-10 mm in diameter

2.4.6.2 It is common to see a drop of blood at the site

2.4.6.3 Repeat the injection if a lot of liquid runs out or no wheal is seen. The TST can be repeated on the opposite forearm, or on the same forearm at least 10 cm (2 inches) from the previous injection

2.4.6.4 The wheal will typically disappear in 10-15 minutes

2.5 The person can be offered gauze or a cotton ball to remove the blood and can be reminded not to massage the site to avoid squeezing out the PPD and disrupting the test



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- 3 Place uncapped disposable needles and syringes in an appropriate puncture resistant container immediately after use
- 4 Document:
 - 4.1 Date of injection (year, month, day)
 - 4.2 Dose (5-TU, 0.1 mL)
 - 4.3 Name of product
 - 4.4 Manufacturer
 - 4.5 Lot number
 - 6 Site and route of injection
 - 4.7 Name and title of person administering the TST
 - 4.8 Any issues with administration of TST (eg no wheal, repeat at different site, clearly indicate which site is to be measured)

VALIDATION

The prevention and control of tuberculosis is an important component of a comprehensive communicable disease control strategy. For populations at increased risk of tuberculosis and its transmission, public health agencies are responsible to prevent outbreaks by screening for new cases and initiating early diagnosis. In Manitoba, the primary method of testing for TB infection is the tuberculin skin test.

RECOMMENDED READING

Manitoba Communicable Disease Control Branch (2009). *Tuberculosis Communicable Disease Management Protocol*,
<http://www.gov.mb.ca/health/publichealth/cdc/protocol/tb.pdf>

Public Health Agency of Canada (2013) *Canadian tuberculosis standards* 7th Ed. Health
<http://www.phac-aspc.gc.ca/tbpc-latb/pubs/tb-canada-7/index-eng.php>