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Tuberculin Skin Testing

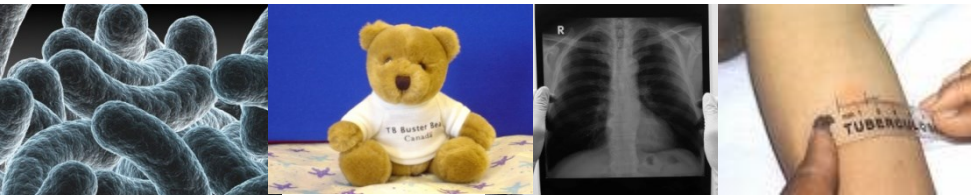
Alberta Region First Nations and Inuit Health Tuberculosis Program

(reviewed 2017)



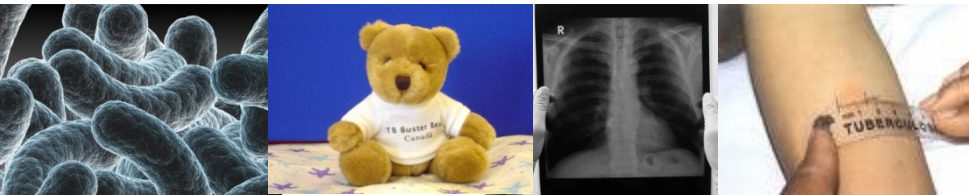
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- Administration technique
- Reading
- Interpretation



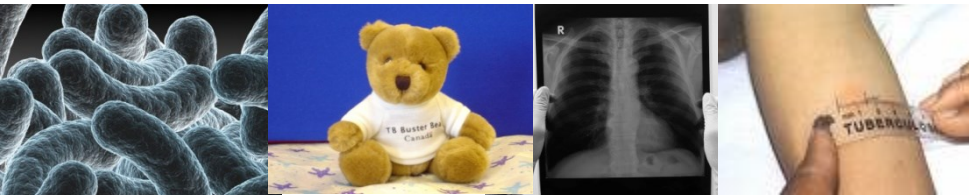
Tuberculin Skin Test (TST)

- Tuberculin skin test (TST)
 - Mantoux
 - Purified Protein Derivative (PPD)
 - Tubersol



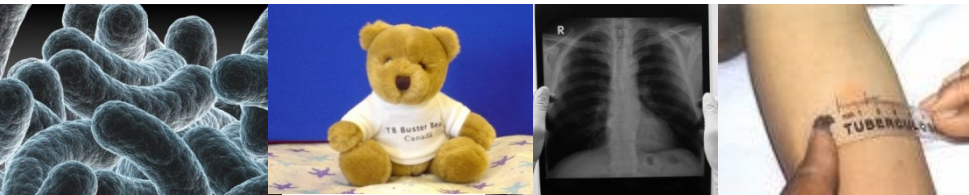
Tuberculin Skin Test (TST)

- Purpose
 - To determine if a person has TB infection
 - Does **not** diagnose TB disease



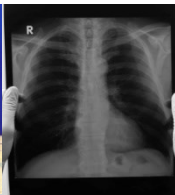
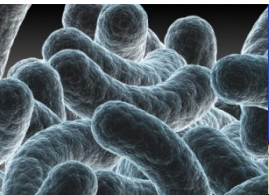
Eligibility

- With history of no previous positive
- In Alberta, TST should be given only to those who qualify under the provincial TB program
 - Contacts
 - At risk medical conditions
 - Travel to endemic areas
 - Occupational risk
 - Residents of communal settings (>3 months)
 - Foreign born from endemic areas



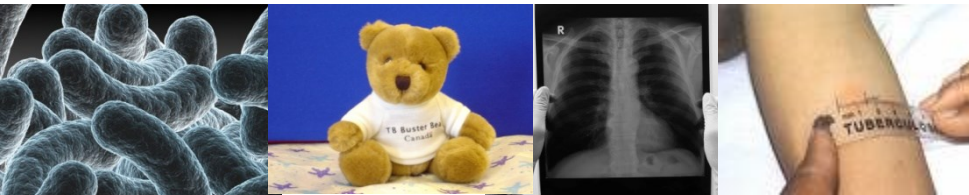
Storage and Handling of PPD

- Store in refrigerator between 2° and 8° C
- Keep out of light -- store in box
- Date when vial is to expire and initial
- Discard 30 days after opening
- Draw up just prior to administration
- Do not inject air into the vial



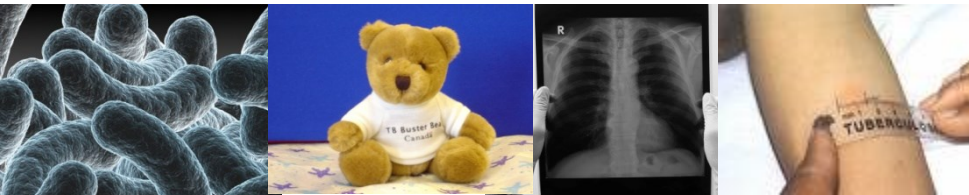
Preparation

- Equipment
 - 1 cc tuberculin syringe – safety syringes are available at DDC
 - alcohol swabs
 - 5 TU Tuberculin Protein Derivative (Tubersol™)
 - cotton ball
 - Education material



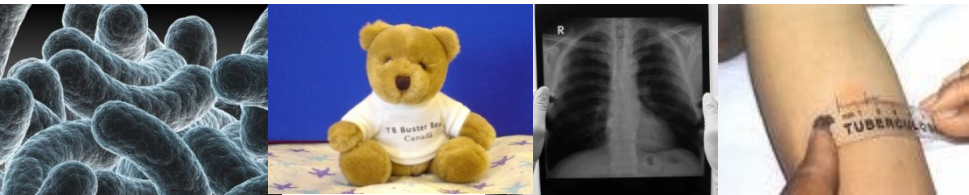
Preparation – cont'd

- Provide privacy
- Obtain client TB history and assess for current symptoms
- Explain procedure and obtain informed consent
- Make plan for reading in 48 to 72 hours



Administering the Test

- Usually done on the left forearm (dorsal or volar surface)
- Intradermal injection of 0.1 ml of 5 tuberculin units of PPD

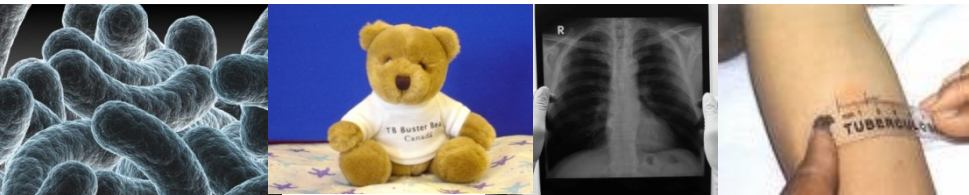


Administering the test - continued

- Alternate sites
 - Right arm
 - Over scapula
 - Thigh
 - Lower flank
 - Upper chest



Photo courtesy of
Centers for Disease Control and Prevention, Department of Health
& Health Services, USA



Administering the Test– cont'd

- Tighten needle onto syringe
- Be sure bevel is perpendicular to the flange of syringe
- The antigen should be drawn up just before administration.

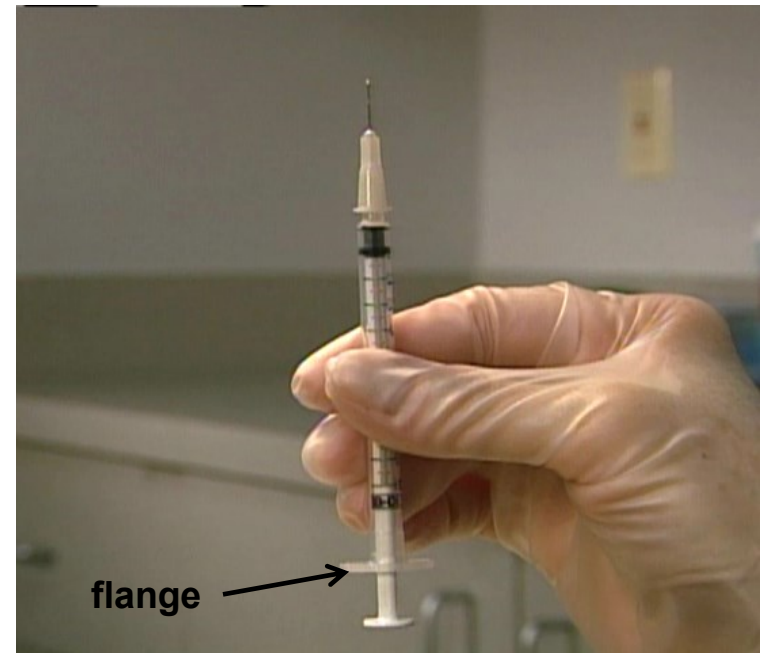
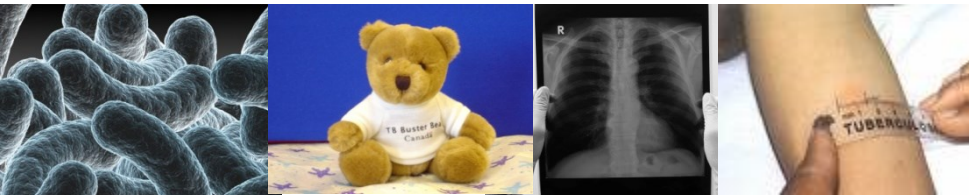


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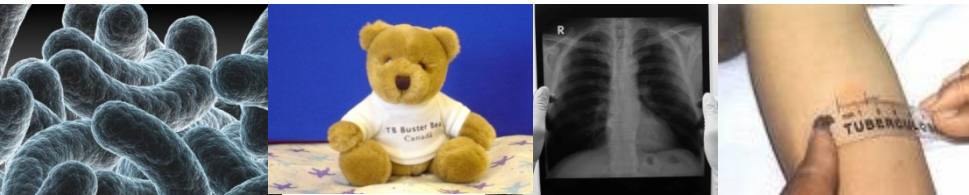


Administering the Test– cont'd

- Provide good lighting
- Wipe rubber cap of vial with alcohol swab and allow to dry
- Draw up PPD into syringe without injecting air into the vial.
- Draw a bit more than 0.1 to allow for losses. Remove the needle from the vial. Tap to break up air bubbles and squirt out drop until there is exactly 0.1 ml in the syringe.

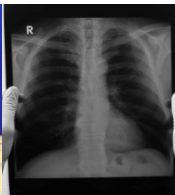
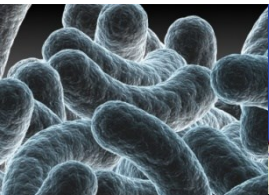


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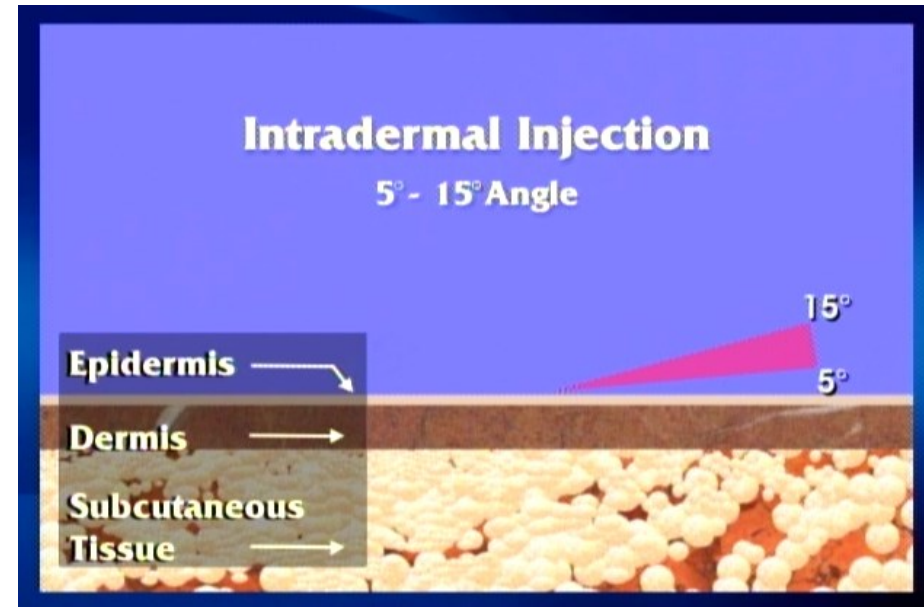
Administering the Test– cont'd

- Choose a site that is
 - on the volar surface of the forearm, approx. 10 cm below elbow
 - free of blood vessels, muscle margins, lesions, excessive hair, or edema
- The standard is the left forearm.
- Support arm of a firm surface

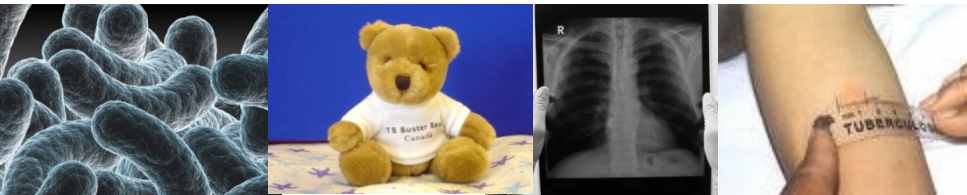


Preparing – cont'd

- Wipe injection site with new alcohol swab and allow to dry completely
- Stretch skin taut at injection site before inserting needle
- Hold syringe almost parallel to the skin with bevel up



Graphic courtesy of
Centers for Disease Control and Prevention, Department of Health
& Health Services, USA

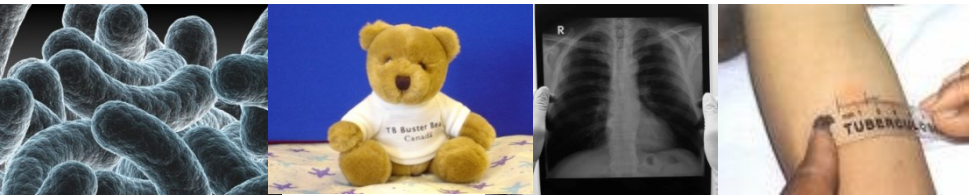


Administering the Test

- Insert needle into the superficial layers of the skin until bevel is fully inserted and tip is visible under the skin
- Release tautness and stabilize syringe



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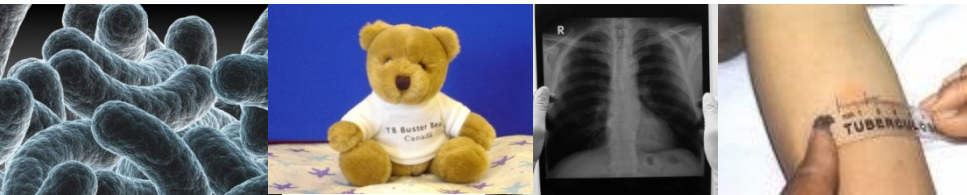


Administering the Test – cont'd

- Inject slowly.
Resistance will be felt
as bleb 6 – 10 mm
diameter forms.
- Wipe drop of blood
with cotton ball



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Administering the Test – cont'd

- Measure bleb
 - Must be 6 to 10 mm

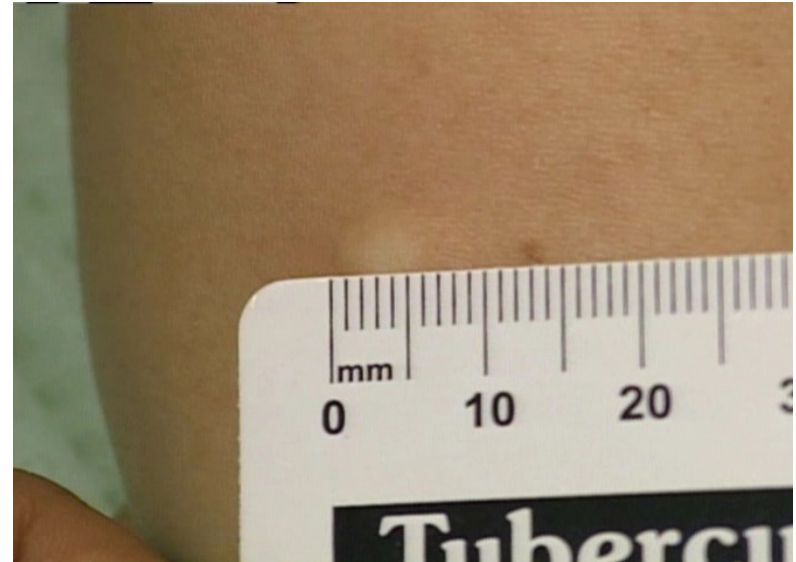
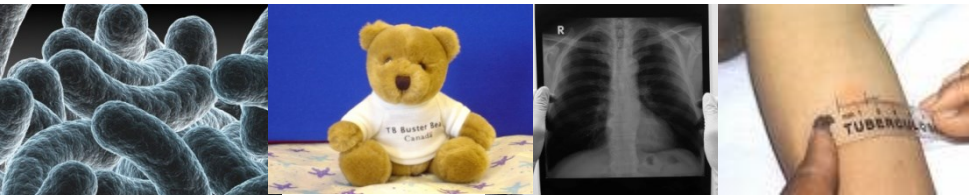
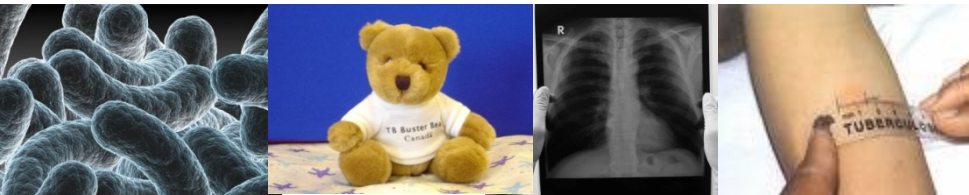


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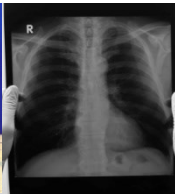
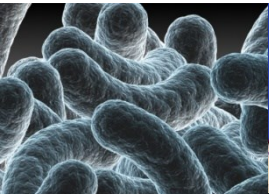
Administering the Test – cont'd

- If little resistance and no or a less than 6 mm bleb, the test is likely too deep and will not be reliable
- If a substantial amount leaks out, the needle was too shallow and test will not be reliable
- In these circumstances the test must be repeated at least 5 cm from the original site or in the other arm

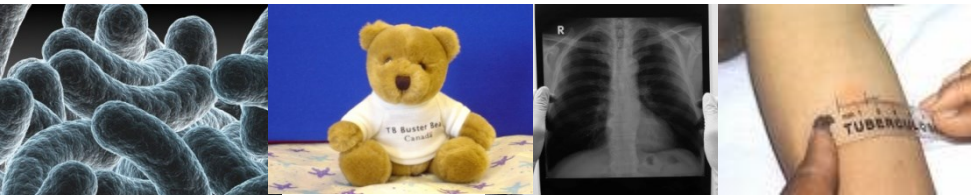


Administering the Test – cont'd

- Record on client file
 - Date and time
 - Initials
 - Site
 - Manufacturer
- Review education and TST aftercare
 - No bandages, ointments or lotions
 - Avoid scratching or rubbing
 - Cold damp cloth to relieve itching
 - May bathe as usual
- Give appt. reminder to return for reading

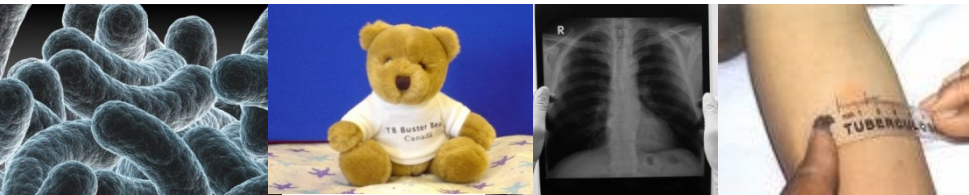


Reading of TST



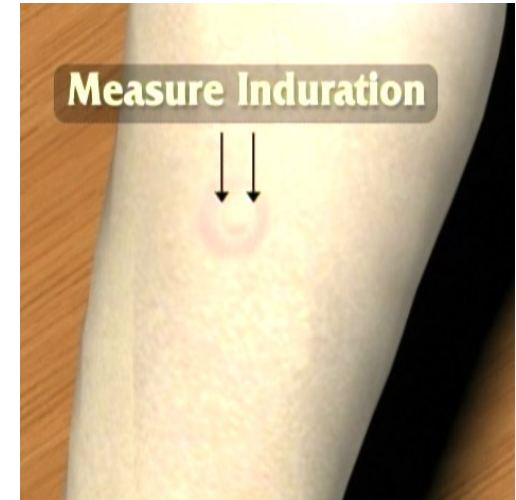
Reading the TST

- Must be done by a trained healthcare professional (never “self-read”)
- 48 - 72 hours after injection
- Should be read in good light with arm slightly flexed
- There may or may not be redness and swelling
- Only induration is measured
- Inspect the site from a side view against the light as well as by direct light and palpation

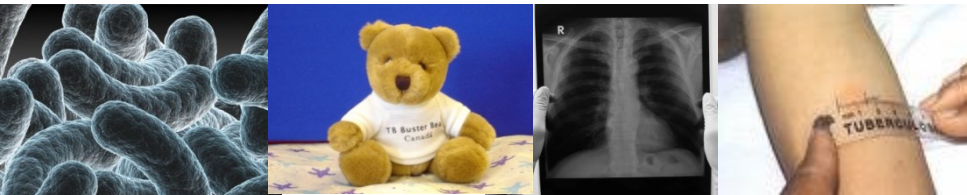


Reading the TST

- Palpate margins of induration
- Measure only induration
 - Diameter of indurated area only is measured across the forearm
 - Mark the edges with a pen
 - Use flexible ruler or caliper
 - Measurement in millimeters(mm)

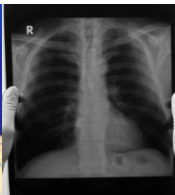


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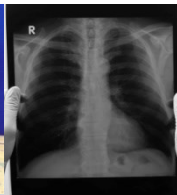
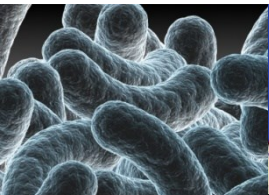
Recording the reaction

- Record size of induration in mm
 - Do not use interpretive descriptors such as “positive” or “negative”.

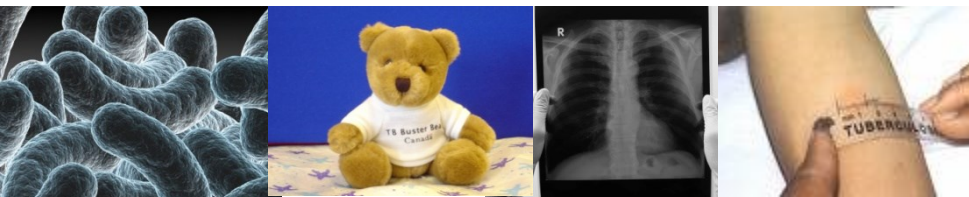


Interpretation of TST Result

- Depends on the context in which the testing was done
 - In a low risk context a positive test is 10 mm or greater
 - For contacts or severely immune suppressed 5 mm is positive
- False negative reactions are a possibility for those with suppressed immune systems.
- False positives are occasionally caused by non-tuberculosis mycobacteria



- Proceed with appropriate follow up for positive reactors
 - Pg 5 and 6 of 'A Synopsis of the "Tuberculosis Prevention and Control Guidelines for Alberta" for Health Care Providers Working with First Nations Communities'



- Alberta Region FBIHB TB program
 - TB program Coordinator 780 495 5407
 - TB Screening & Education Nurse 780 496 6071
- Thank you

