Booster Phenomenon

When individuals are sensitized to *M. tuberculosis*, it usually persists throughout life and should reflect in every subsequent TST test done. However, some people will experience a decrease in the size of the reaction to the point it disappears. For these people, there is waning of their immune response to TB over time. The *booster phenomenon* occurs when a person’s immune response has waned. They will have an increased TST reaction not caused by a new infection but by the stimulation of their immune response to the TST. Yet, it could be incorrectly interpreted as a recent conversion with TB. A careful risk (medical and social) assessment should be done with the client to determine whether the benefits of treatment of LTBI outweigh the risks of not treating. For clients who have had BCG vaccination after age one, consider testing with IGRA.

The *booster effect* has been described in the following individuals:

- Older adults
- BCG vaccinated populations
- Individuals with prior exposure to NTM

Reactor

If a person has a history of being infected with TB but the positive TST result is undocumented or a negative TST result is documented more than 2 years ago with a current positive TST result due to an unknown history of exposure, they are referred to as a reactor.

Two-Step TST: Distinguishing Between the Booster Phenomenon and Conversion

To help discern between the booster phenomenon and conversion reactions, a *two-step TST* can be done. It provides an accurate baseline for individuals who will have repeated testing or who may have exposure to an infectious TB case (e.g. health care practitioners). The two-step TST requires the administration of two TSTs using the same techniques described in previous sections. A two-step TST is appropriate for the following situations:

- Subsequent skin testing will be done regularly (e.g. health care practitioners)
- Residents in long term care facilities on admission, should have a two-step TST (if no previous 2 two-step)
- Staff who might be working with TB positive patients or clients (e.g. staff in correctional facilities)

Two-step TSTs are:

- Performed once and documented for future reference
- Never repeated but subsequent one step TST can be done if appropriate
- Never done during a contact investigation. See Section 10, Role of Public Health in TB Prevention and Control in the NWT.
Figure 4.3: Description of Two-Step TST Testing

Adapted from CDC Core Curriculum on Tuberculosis, website: http://www.cdc.gov/tb/education/core-curr/pdf/chapter3.pdf

The results from the second test will assist in ruling out a booster phenomenon. All TSTs must be reported to OCPHO.