Two-Step TB Skin Test

The 2-step test is not the usual PPD skin test in which you receive an injection of PPD and the test area is observed one time at a specific time frame.

The 2-step PPD test is used to detect individuals with past TB infections who now have diminished skin test reactivity. This procedure reduces the likelihood that a boosted reaction is later interpreted as a new infection.

The reason for the 2 stage PPD test appears to be the “booster phenomenon”. It occurs in some people who were infected with TB in the past because the body loses its ability to react to the tuberculin solution. Thus, when these people are tested many years after the initial infection they may have a negative reaction. However, if they are tested a second time within up to one year of the first test, they may have a positive reaction. This positive reaction is due to a “boosted” ability to react to the tuberculin solution. To avoid misinterpretation between a boosted response and a new infection, many facilities employ the 2-step procedure. In this procedure a person is given a baseline PPD test. If the test is (-), a second test is administered 1-3 weeks later (i.e. the second test can be read 7-21 days after the first). If the second test is negative, the person is considered uninfected. If the second test is positive, then the person is considered to have a “boosted” reaction to an infection that occurred in the past.

Beyond that, secondary testing is useful to help offset potential false negative testing results. The sensitivity of the tuberculin testing in patients presenting with newly diagnosed pulmonary TB can be as low as 80% in immune-compromised or otherwise unhealthy compromised patients. The 20% false-negative rate is due to a combination of immune-suppression of delayed hypersensitivity from cytokines as well as factors relating to acute illness and/or poor nutrition. Even once these patients have returned to normal health and nutrition status, such as those of the general population, the sensitivity of tuberculin testing is still only approximately 95%. This one-in-twenty false negative rate could certainly warrant the use of secondary testing, especially for those working in a healthcare setting.
At Pacific, we only utilize the “4 visit” approach for 2-step testing (per CDC and Student Health recommendations):

1. Visit 1, Day 1: PPD antigen is applied under the skin
2. Visit 2, Day 3: PPD test is read (within 48-72 hrs of placement). If positive, it indicates TB infection and a chest x-ray and further evaluation is necessary.
3. Visit 3, Day 7-21: a second PPD skin test is applied (for those that test one was negative)
4. Visit 4, 48-72 hours after placement: the second test is read. A positive 2nd test indicates TB infection in the distant past. CXR and further evaluation will likely be necessary.

When you turn in skin test results to the School of Pharmacy, please ask your provider to include actual measurements, if there are any. Some rotation sites require this information.

For those individuals vaccinated against TB with BCG Vaccine, you still can be tested with PPD after a 3-5 year period post the BCG Vaccination. Positive PPD tests at this point could indicate TB infection.

If you know that you test positive for TB via the skin test and you have been required to get a chest xray in the past, current School of Pharmacy policy is a repeat chest x-ray every 2 years. Note that some experiential education sites may have different requirements.