

Penicillin Skin Test Procedure

*****This test is only to be administered by the ID Physician. ID Physician will remain in the room during the duration of the procedure*****

Purpose: The Penicillin Skin Test is used to test for the diagnosis of a penicillin allergy. Note, this differs from the Antibiotic Desensitization protocols which are used to desensitize an already diagnosed allergic patient. The Penicillin Skin Test Procedure document outlines the criteria, procedure, documentation, and materials needed.

I. Patient Criteria

Inclusion Criteria:

- Patient is ≥ 18 years old.
- Patient reports having a Type I hypersensitivity reaction to penicillin >5 years ago.
- Penicillin or a β -lactam antibiotic is the drug of choice for treatment in this patient.
- Patient consents to this procedure.

Exclusion Criteria:

- Patient reports an immediate reaction (within 1 hour) to the antibiotic within the last 5 years.
- Patient is pregnant.
- Patient has taken histamine antagonists in the past 48 hours.
- Patient reports a hypersensitivity reaction other than a Type I reaction (hemolytic anemia, interstitial nephritis, Stevens-Johnson syndrome, etc.)
- Patient has an intolerance to the antibiotic (eg stomach upset), not a true allergy.
- Patient has severe immunosuppression, not including Diabetes or corticosteroid use.

II. Procedure

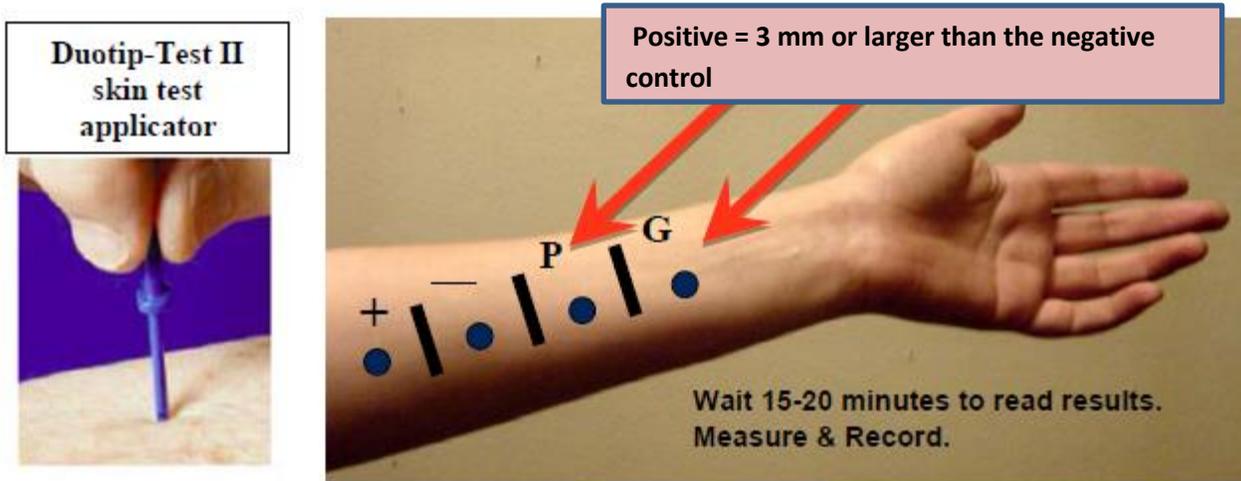
Proper technique, including washing hands and using alcohol swabs shall be performed at all times

Step 1) Prick Test

This will be performed first on patient, before proceeding to intradermal testing.

- Sequential tests, spaced about 1 inch apart shall be made on either the volar surface of the forearm or the lateral aspect of the upper arm. Clean designated area with an alcohol swab and let dry.
- Using an ink pen, draw 3 vertical lines about 1 inch apart on the designated testing area of the arm.
- Draw up 0.2 ml of the 3 solutions (Pre-pen, diluted Penicillin G and saline negative control), and 0.1 ml of histamine positive control, in 4 separate allergy syringes (0.5 ml).
- Apply a small drop of each solution to the separate pre-marked sites on the testing arm (see Figure 1)
- The histamine test site should be the most distal site, followed up the arm by saline, Pre-Pen, and Pen G
- Puncture the epidermis using a twisting motion at each drop site using the Duotip-Test II applicator. Do not draw blood.
- Read the test in 15-20 minutes:
 - Test is **negative**: change in diameter of wheal is <3 mm than that observed with the negative control. **Proceed to intradermal test.**
 - Test is **positive**: change in diameter of wheal is >3 mm that that observed with the negative control. As soon as a positive response is observed, the solution should be wiped off the skin. **Do not proceed to intradermal test.**
 - The positive control (histamine skin test) should be positive to ensure the results are not falsely negative.
 - The negative control (saline skin test) should be negative. If a wheal $>2-3$ mm develops after 20 min, repeat prick skin test. Upon re-testing, if control still creates a wheal $>2-3$ mm after 20 min, discontinue test and notify the Stewardship Pharmacist. This may indicate the presence of a skin condition known as dermatographism.

Figure 1



Step 2) Intradermal Test

Test is conducted only if the prick test is negative.

- Select 5 sites on either the volar surface of the forearm or the lateral aspect of the upper arm for intradermal testing. These sites should be on the opposite arm as the prick test, if possible. (see Figure 2)
- Using a 26-30 gauge, short bevel needle, intradermally inject 0.02 ml of Pre-Pen solution **twice** (separate at least 2 cm apart). Mark the margins of the initial blebs with an ink pen.
- Using separate needles and syringes, intradermally inject diluted Pen G (0.02ml = 200 units PCN) **twice** (separate at least 2 cm apart) and 0.02 ml of saline (separate at least 5 cm apart from other sites).
- Read in 20 minutes (see Figure 3):
 - Test is **negative**: there is no increase in the original bleb and no greater reaction than the negative control site.
 - Test is **positive**: bleb or wheal increases >2 mm from its original size or is >2 mm larger than the negative controls. Patient is NOT to receive penicillin.
 - If the negative control (saline) site exhibits a wheal >2-3 cm, repeat the test.

Figure 2

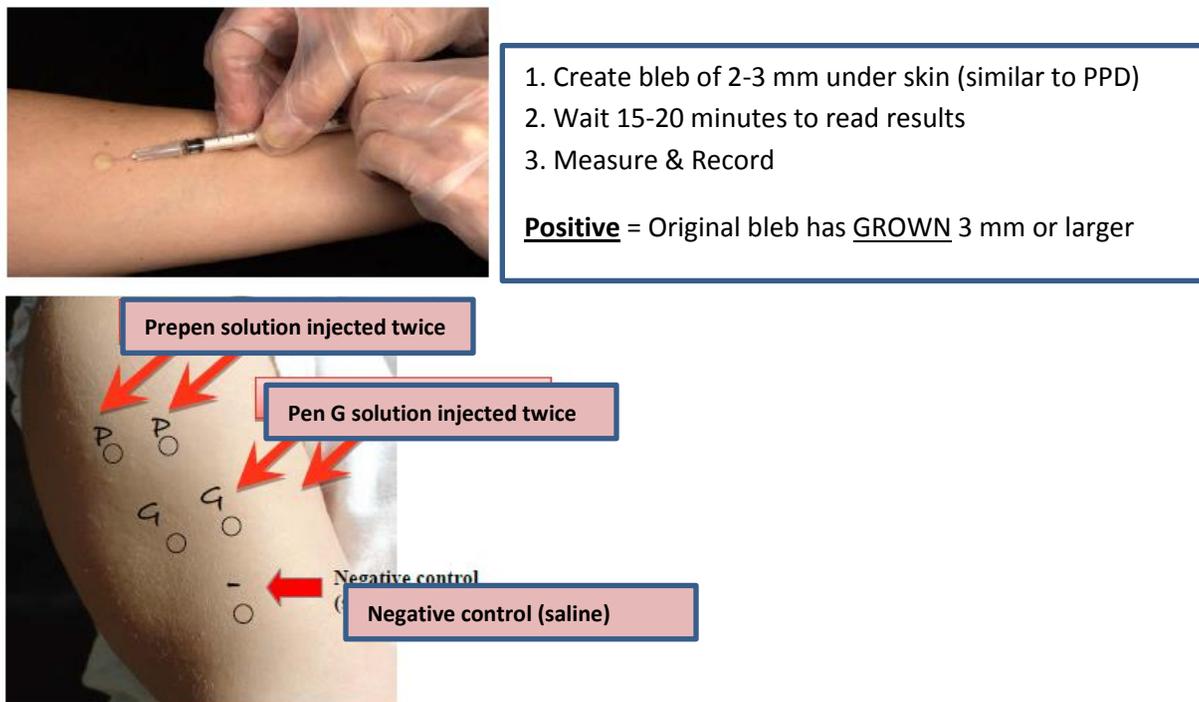


Figure 3



III. Anaphylaxis –Reaction Intervention

- a. Emergency medications (epinephrine, methylprednisolone, diphenhydramine) will be ordered by the MD as prn medications available for the nurse to administer if needed. The nurse will follow the Systemic Reaction Chart for instructions.

IV. Documentation

- a. Bedside nurse shall document all medications on the MAR on behalf of ID Physician
- b. MD will document procedure and summary of results in electronic medical record utilizing EPIC note template “.horiskintest”.
- c. MD or ID Pharmacist will update patients’ allergy information in EPIC based on test results.

Procedure adapted from Memorial Hospital Skin Test Procedure and Pre-Pen website: http://www.pre-pen.com/files/document_24.pdf