SOP on Demonstration of Penicillin Skin Test

Department of Pharmacology
Faculty of Medicine
UWUSL

STANDARD OPERATING PROCEDURE (SOP)
ON DEMONSTRATION OF PENICILLIN SKIN TEST

Title
Demonstration of Penicillin Skin Test for Undergraduate Pharmacology Teaching

Issued by
Department of Pharmacology
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(1) Purpose
To establish a standardized, safe, and effective procedure for performing the penicillin skin test, aimed at detecting immediate hypersensitivity reactions and thereby preventing adverse outcomes.

(2) Scope
This SOP applies to medical students, medical officers, nursing staff, and trained healthcare personnel who are involved in administering penicillin or supervising its use.

(3) Responsibilities
(3.1) Lecturer (Academic Staff)
1. Provide theoretical knowledge on penicillin skin testing
2. Demonstrate the correct procedure
3. Ensure adherence to standard guidelines
4. Supervise and guide students/healthcare professionals
5. Review all allergy histories taken by students to ensure accuracy and appropriateness before proceeding with the test.

(3.2) Healthcare Professionals / Students
1. Assess patient allergy history
2. Perform the skin test using the correct technique (under supervision if required)
3. Interpret results accurately
4. Monitor and report any adverse reactions

(4) Ethical and Academic Considerations
1. Obtain informed consent
2. Maintain patient confidentiality
3. Ensure patient safety
4. Be prepared for immediate emergency management, including anaphylaxis protocols.

(5) Prerequisites

1. Detailed allergy history
2. Availability of emergency drugs
3. Sterile equipment
4. Patient consent obtained

(6) Materials Required

- Penicillin test reagent (benzylpenicillin or standard determinants



- Normal saline (negative control)



- Histamine (positive control, if used)



- 1 mL syringe with 26–27G needle



- Alcohol swabs



- Ruler (for measuring wheal)



- Emergency drugs including Adrenaline, corticosteroids, and antihistamines



- Oxygen cylinder with delivery apparatus



(7) Procedure

(7.1) Exclusion Criteria (to be determined by Lecturer/Academic staff before testing)

- Patient with a documented history of severe penicillin allergy (eg: anaphylaxis, Stevens-Johnson syndrome, Toxic Epidermal Necrolysis (TEN)
- Patients with unstable medical conditions where testing poses undue risk.
- Any other exclusion deemed appropriate by supervising academic staff.

(7.2) Pre-Procedure Preparation

1. Explain the procedure to the patient



2. Select test site (inner forearm)



3. Perform hand hygiene

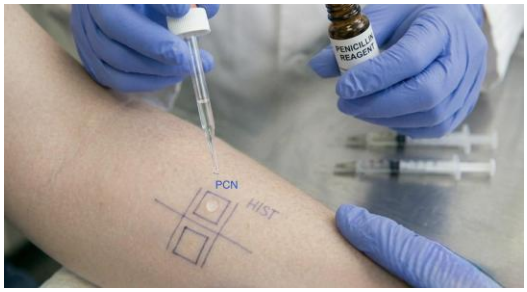


4. Prepare emergency equipment

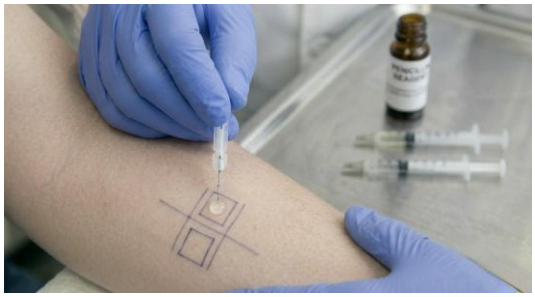


(7.3) Skin Prick Test

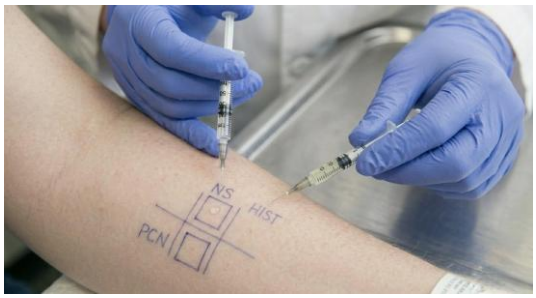
1. Place a drop of penicillin reagent on the skin



2. Prick skin with a sterile lancet



3. Apply controls (saline, histamine)



4. Wait 15 minutes



(7.4) Intradermal Test

1. Inject 0.02–0.05 mL of diluted penicillin intradermally

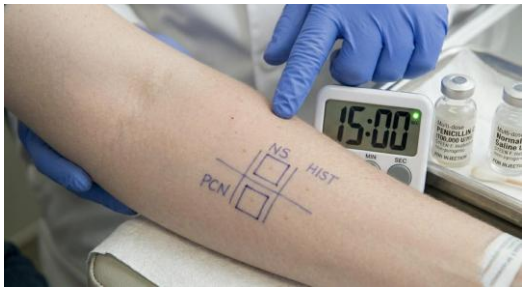


2. Raise a small wheal

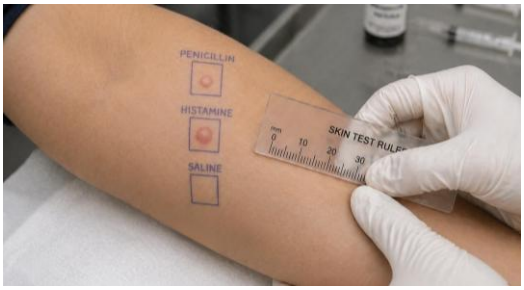
3. Inject saline control at a separate site

(7.5) Observation

1. Wait 15–20 minutes



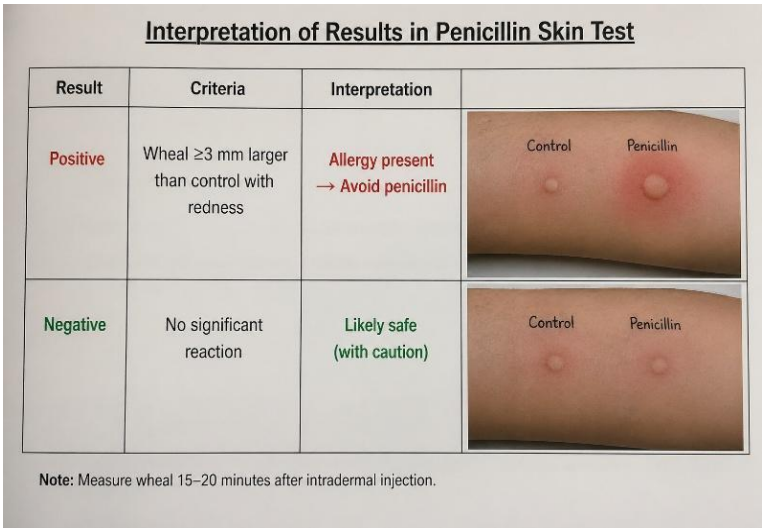
2. Observe for wheal and redness



(8) Interpretation of Results

Positive: Wheal ≥3 mm larger than control with redness → Allergy present

Negative: No significant reaction → Likely safe



(9) Precautions

1. Perform in a setting equipped to manage Anaphylaxis
2. Do not perform in patients with a history of severe penicillin allergy
3. Continuous patient observation is essential.

(10) Limitations

1. Does not detect delayed hypersensitivity reactions
2. False negatives may occur
3. Not all antigenic determinants are covered.

(11) Records and Documentation

1. Record date and time
2. Type and concentration of reagent
3. Test results (wheal size)
4. Note any adverse reactions

(12) References

- ASCIA Penicillin Allergy Guidelines
- CDC Guidelines on Penicillin Allergy

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