

STANDARD OPERATING PROCEDURE FOR PERFORMING ALLERGY SKIN TESTING

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1.0 Introduction

Skin Prick Testing (SPT) is a popular and accurate allergy test performed on a global scale. Allergen skin testing was first used by Dr. Charles Blackley in 1873, to diagnose pollen as the cause of his hay fever. In 1924 the current skin prick test method was introduced, and in 1975 Prof J Pepys proposed the modified skin prick testing method. Today the allergen extracts and lancets are standardised, and this method is used universally.

SPT should only be performed by trained practitioners who are also trained in resuscitation techniques.

SPT should only be interpreted in conjunction with a clear, clinical history.

Advantages

Different allergens can be tested simultaneously because the resultant reaction to a specific allergen is localized to the immediate area of the SPT.

The test can be interpreted within 15 -20 minutes from applying the allergen to the skin.

SPT can be used to test less common allergens, such as certain medications, and fresh foodstuffs where no specific IgE antibody measurement is available

2.0 Definition of Standard Operating Procedure

These tests measure immediate (IgE) sensitivity to various allergen extracts when applied by pricking the skin. When relevant allergens are introduced into the skin, specific IgE bound to the surface receptors on mast cells are cross-linked, mast cells degranulate, and histamine and other mediators are released, producing a wheal and flare response which can be measured. Ideally all SPT should include a positive and negative control test.

The negative SPT is done using a buffered saline; there should be no wheal reaction, unless the patient suffers from dermatographia. If there is a reaction to a negative control, the test is not valid. The positive test is done using a drop of histamine 10mg/ml; this test should induce a wheal reaction of at least 3mm diameter. A smaller wheal, or no wheal at all should alert the tester to the possibility of concomitant medication.

Drugs such as antihistamines, antidepressants or topical steroids will suppress the results and the test will not be valid.

Contraindications to SPT

- Extensive atopic eczema with no clear area of skin to test
- Dermatographia with wheal development on pressure
- Severe allergic reaction to nuts, horsehair, latex or food allergen
- Extreme fear of needles
- Pregnancy

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- Incorrectly stored allergens

Equipment

- SPT order form
- Allergens to be tested, check against order form, check expiry dates
- Pen to mark the skin
- Appropriate number of lancets
- Sharps bin
- Paper towel
- Timer
- Ruler or see –through gauge
- Appropriate Emergency Equipment must be accessible:
- Antihistamine; tablet and liquid
- Adrenaline autoinjector or vials of adrenaline 1:1000, needles and syringes
- Hydrocortisone ointment

3.0 Applicable to

This Standard Operating Procedure applies to Nursing Staff in the Allergy Clinic caring for children requiring skin prick testing.

ACTION	RATIONALE
<p>Ensure emergency equipment available</p> <p>Gather and prepare the equipment required before bringing the child into the treatment room</p> <p>Explain the procedure to the parents and child, using age appropriate language.</p> <p>Children under 16 years of age should be accompanied by a parent or guardian</p> <p>Address any concerns or questions.</p> <p>Obtain informed verbal consent</p>	<p>To ensure the safety of the child</p> <p>To avoid unnecessary delays, and to minimize stress for the patient.</p> <p>To inform the child and family, to gain co-operation, and to promote patient's understanding and trust</p>

ACTION A	RATIONALE AND REFERENCE
<p>Decontaminate your hands by handwashing</p> <p>Check recent medication history</p>	<p>To prevent cross infection. Hand washing is the most effective way to prevent cross-contamination of allergen substances</p> <p>Test is contra-indicated following certain medications Test is contra-indicated if child is unwell</p>
<p>Check if there is a history of fainting</p>	<p>Test may need to be done in a room where there is a bed or couch for the child to lie down if required.</p>
<p>Select an appropriate site for the test. The volar aspect of the arm is used.</p> <p>Test should only be performed on skin that is clear and eczema-free, and where no steroid cream or emollient has been applied.</p> <p>The tester should sit opposite the child, holding the selected arm.</p> <p>A pillow may be used to rest the arm.</p> <p>Both arms may need to be used</p> <p>Younger children may sit on parent's lap facing the nurse</p> <p>Prepare the site for the test.</p> <p>Mark and label the individual allergen test sites in two columns about 3cms apart with a felt tipped or ballpoint pen</p> <p>Avoid the skin <5cms from the wrist or <3cms from the elbow crease</p> <p>Place a small drop of the identified allergen on the skin at</p>	<p>This sensitive area of skin reacts well</p> <p>Steroid cream can affect the result of the test Emollient or moisturiser can cause the drop to roll off the skin</p> <p>Allows the nurse to engage with and reassure the patient.</p> <p>Allows the arm to be held in secure position</p> <p>Dependent on the number of tests requested, and on the condition of the skin</p> <p>Parental contact provides reassurance</p> <p>To identify the allergens</p> <p>Skin sensitivity to SPT varies in these areas.</p>

<p>2-3 cm intervals, beginning with the negative control, and ending with the positive control.</p>	
<p>A standardised lancet should be used with a 1mm pointed tip and blunt shoulder</p>	<p>To prevent excessive trauma to the skin</p>
<p>The lancet is pressed through the drop of allergen, at 90 degrees to the skin, allowing puncturing of the skin, no blood should be drawn</p>	<p>To allow the allergen entry to the skin</p>
<p>If using fresh food, the lancet is dipped into the food, or the food is punctured with the lancet, the skin is then pricked with the fresh food residue on the lancet</p>	
<p>A fresh lancet should be used to test each allergen.</p>	<p>To prevent cross contamination of allergen substances leading to false results</p>
<p>Once the droplets have been penetrated, the excess allergen droplets are carefully blotted away using a clean paper towel, do not wipe the area.</p>	<p>To dry the skin without cross contaminating the allergens</p>
<p>Dispose of the lancets in the sharps bin</p>	<p>To prevent the risk of sharps injury</p>
<p>Set the timer to alarm in 15 minutes</p>	<p>To record result in a timely manner</p>
<p>Praise the child</p>	<p>To acknowledge the child's participation</p>
<p>The child and parent should remain in the clinic area, within sight of the Allergy Team, for the duration of the test.</p>	
<p>If the child becomes unwell, refer to the Protocol for Vasovagal / Adverse Reactions.</p>	
<p>When 15 minute interval has passed any wheals that have arisen are measured.</p>	
<p>"Flare" or redness surrounding the wheal may be noted, but not measured.</p>	<p>Not necessarily an indication of sensitivity to the allergen</p>
<p>The wheal circumference is marked with a pen</p>	<p>Wheals may start to reduce in size after 15 -20 minutes</p>
<p>The diameter is measured in millimeters using a ruler or</p>	

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