Paediatric Skin Prick Testing

Standard Operating Procedure
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A Skin Prick Test (SPT) is a simple and safe method of testing a person to determine whether or not they have an IgE mediated allergic response to a specific inhalant or food allergen, to help with a diagnosis within the skin, respiratory or gastro-intestinal organs.
SPT should be performed by trained practitioners who are also trained in resuscitation techniques.
SPT should only be interpreted in conjunction with a clear clinical history. Individuals may have a positive SPT without having allergy symptoms. These guidelines do not cover the interpretation of the tests.

Equipment

- Skin Prick Solutions of the appropriate allergen/substances to be tested, plus a negative and positive control. Check manufacturer's expiry date on all skin prick solutions and once opened the date must be written on the bottle and the contents must be used within 6 months.
- Documentation sheet
- Soluprick pen
- Skin prick testing lancets
- Sharps box
- Tissues
- Timer
- Skin test reaction gauges
- Pillow – on which to rest the child's arm

- Appropriate emergency equipment must be accessible

    - Antihistamine (syrup/tablet)
    - Adrenaline Auto-injector or Vials Adrenaline 1:1000 plus needles and syringe
    - Hydrocortisone ointment or calamine Lotion

The skin prick tester should sit opposite the patient with the patient's forearm resting on the pillow with the volar aspect upwards. This enables the tester to maintain eye contact with the patient at all times and provide the patient with a comfortable position for the test.

The younger child can sit upon their parent's lap opposite the tester with the pillow resting between them. The parent to hold the upper arm while the tester holds the child's hand or wrist. This enables the tester to maintain eye contact with the parent and child at the same time keeping the child's arm steady, while the child receives reassurance from parental touch. This method is preferable to SPT on the back as maintaining eye contact and being able to see what is happening makes the procedure less frightening for the child.

PROCEDURE	RATIONALE
1 Gather equipment required - see equipment list above	To prevent unnecessary delays
2 Give an accurate, and appropriate account of the procedure to the child and family. The family be advised of the involvement of the play specialist if required	To ensure child and carers are fully informed and to relieve anxiety and promote compliance and parents are able to give informed verbal consent
3 Take consent from an appropriate adult	
4 Document that consent has been taken	
5 If taking antihistamines, check when last taken. The child should have stopped taking any form of medicine containing antihistamine at least 48 hours (depending on the antihistamine used) before the test or a time to comply with local guidelines.	Antihistamines will interfere with the outcome of the skin prick test and should not be taken prior to the test
6 The nurse must wash her hands prior to commencing the procedure, following the hand hygiene policy and also once the procedure has been completed.	To prevent cross infection
7 The nurse administering the procedure to select an appropriate site for the skin test (forearm or back), according to the age of the child, child's preference and skin condition. The test should only be performed on clear, eczema free skin where topical steroids and emollients have not been applied	To enable the test to be carried out as efficiently as possible and without complications.
8 Ensure the site chosen for the test is free from body lotions and moisturisers	Body lotions and moisturisers can cause the allergen drops to run
9 The site chosen should **not** be cleaned with antiseptics or alcohol	Antiseptics and alcohol can temporarily impair the ability of the skin to react
10 Ensure the child is comfortable, e.g. support the arm on a pillow. If appropriate allow the child to sit on parent's lap.	To ensure the child is as relaxed and reassured as possible throughout the procedure.
11 Mark the skin with the initial letter of each allergen being tested. Each site should be a minimum of 2cms apart	To ensure clear identifiable readings of positive reactions (avoiding overlap and confusion of borders)
12 Always start with the negative control and end with the positive control	To provide consistency and also because the positive allergen reaction time is the quickest
13 Use distraction throughout the test	To reduce anxiety and promote compliance
14 Place one drop of each allergen solution in line with its marked place on the skin. Alternatively, if the substance being tested is not available in a prepared solution then a "prick-to-prick" method may be used. This is done by inserting the lancet into the substance being tested sufficiently to ensure that some of the substance is transferred on it.	To prevent wastage and ensure the accurate identification of the allergen
15 Push the lancet through the drop of allergen (if prepared solution is used) or directly to the identified site (if using a "prick-to-prick" method) and apply the lancet at 90° to the skin without drawing blood. Only the lancet designed for skin prick testing can be used. The lancet should then be immediately discarded into the sharps bin.	To ensure that the allergen penetrates the outer surface of the skin To minimise discomfort for the child and promote safety of procedure To ensure safe disposal of sharps

PROCEDURE	RATIONALE
16 Repeat the procedure for each allergen and the controls using a new lancet for each allergen	To prevent contamination between the allergens
17 Carefully remove the surplus fluid from all sites simultaneously by placing a paper tissue over the drops. Take care not to cross contaminate the sites with other allergen solutions. If the child is moving it may be preferable to complete each allergen separately	To remove surplus fluid and thereby reduce the risk of contamination
18 The results should be read 15 minutes after the positive was completed. The measurements, in millimetres, are taken using skin test reaction gauge. Measure the longest extent of the wheal (not including the flare) and the extent 90° to the first measurement. Record both measurements or the mean of these two measurements	To ensure an accurate assessment of the reaction is recorded - reactions read after 15 minutes may have started to fade and may not be accurate
19 Any pseudopodia should be noted but not included in the measurement of the wheal	
20 A wheal diameter of at least 3mm larger than the negative control is generally accepted as a positive reaction in older children and teenagers. In younger children and babies, a smaller skin test response is considered to be positive. Thus training and experience is essential for the response evaluation.	
21 A wheal response to the negative control solution indicates the child may suffer from dermographism (the skin is reacting to pressure rather than the solution) or is sensitive to the stabilisers in the allergen solutions and so invalidates the test	
22 A negative reaction to the positive control indicates that the child may have taken antihistamines or has had some topical application that is preventing the skin from reacting and so invalidates the test	
23 Hydrocortisone ointment or calamine lotion may be applied to the test site if the child complains of extreme irritation, but only after testing is completed.	Hydrocortisone ointment or calamine lotion will help the area to be less itchy
24 Oral antihistamines can be given to relieve severe itch or for systemic symptoms, such as eye swelling	To relieve symptoms
25 The outcome of the test should be recorded on the Skin Prick Test Form and must include the following: • The date • The child's name, age and hospital number • Any recent antihistamine medication and when last taken • The wheal size of each response in millimetres • Skin prick solution or prick to prick method • Name, designation and signature of the person performing the test	

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