bsaci
improving allergy care
through education, training and research

Nurses in Allergy

Standard Operating Procedure

Adult Skin Prick Testing

Compiled by members of the BSACI Nurses in Allergy Committee

The following standard operating procedure outlines how to perform a skin prick test and is applicable to all health care professionals undertaking this role.

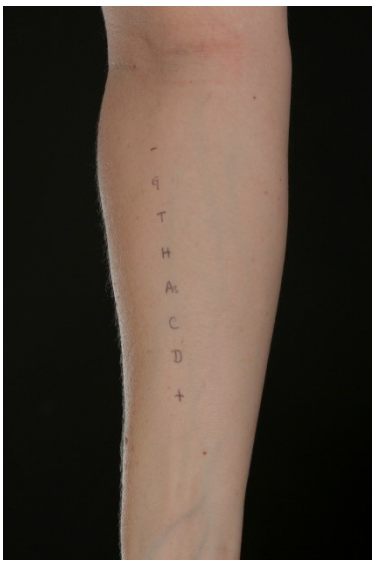
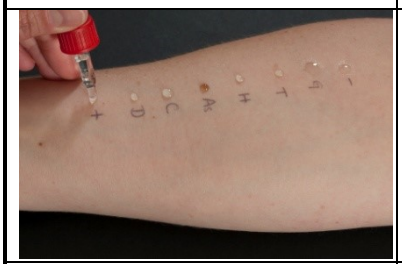
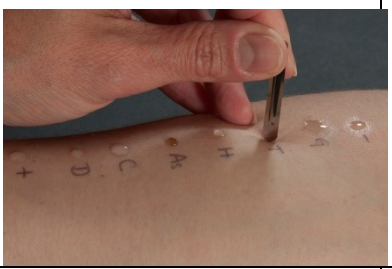
Skin prick testing (SPT) is a method used to determine the presence of specific IgE. SPT should only be interpreted in conjunction with a clinical history as a positive SPT alone is not diagnostic of clinical disease [1,2]. Depending on the allergen, approximately half of positive tests occur in patients who are not allergic to that allergen. SPT should be performed by an appropriately trained and competent healthcare worker who is also trained in recognition and treatment of anaphylaxis [3].

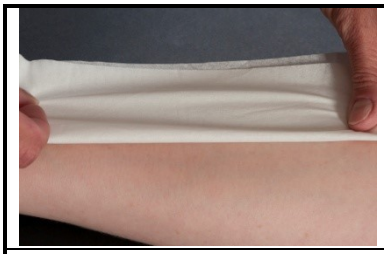
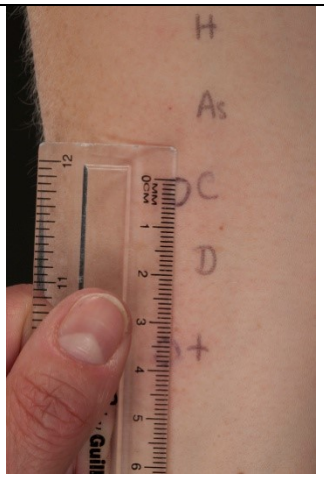
Exclusions
SPT reactions are inhibited by antihistamines and may be inhibited by tricyclic antidepressants, topical corticosteroids and UV light treatment. Therefore where possible inhibitory medication should be stopped or alternative testing methods considered [1,2]. Short acting anti-histamines should be stopped for 72 hours prior to testing

Cautions
Caution should be taken when considering SPT in pregnancy, for patients with unstable asthma or those taking beta blockers and/or ACE inhibitors[1,2].

Equipment
- Selected allergens and positive and negative control solutions (stored at +2-+8°C). Check expiry date and date opened (some manufacturers state that skin test solutions should be used within 6 months of opening.) [4]
- And/or fresh foods to be used for testing
- Skin prick test recording sheet
- Pen
- Individual sterile skin prick testing lancets
- Sharps bin
- Tissues
- Skin test measure
- Timer / clock / watch
- Emergency equipment should be available to treat anaphylaxis, including adrenaline 1:1000 [5]

Preparation
Verbal consent for the procedure should be obtained. The procedure should be undertaken in accordance with local infection control policy using appropriate hand hygiene measures. Select appropriate test site free from eczema / dermatitis, the preferred site is the forearm but the back may also be used.

	PROCEDURE [1,2,3,6]	RATIONALE
	Ensure test site is free from body lotion and moisturisers	Body lotion / moisturiser can cause allergen drops to run, causing cross contamination.
	Test site should be hygienically clean but does not need to be not be cleaned with alcohol or antiseptic	
	Ensure patient is in a comfortable position sitting or, if needle phobic, lying down. Rest arm on a level surface, using pillow if necessary.	To ensure patient is relaxed and able to remain still during the test.
	Mark the test sites approximately 2.5cm apart, using first letter of allergen being tested. Avoid the skin creases (elbow and wrist)	To ensure any reactions do not overlap so that accurate measurements can be made.
	Begin with the negative control and end with the positive control	To provide consistency, to prevent cross contamination from the histamine control and for patient comfort because the histamine control reaction time is the quickest.
	Place one drop of each selected allergen solution* next to relevant marked site. *for prick to prick testing see additional guidance below.	To ensure accurate identification of the allergen when results are read
	Using gentle pressure, push the lancet through allergen solution and into the surface layer of the skin at a 90^{O} angle.	To ensure that the allergen penetrates the outer surface of the skin. To reduce risk of causing bleeding. To ensure a standardised test
	Discard lancet into sharps bin	To ensure safe disposal of sharps
	Repeat the procedure for each allergen and the controls using a new lancet each time	To prevent cross contamination of the allergens

	Remove surplus allergen by blotting test sites with tissue ensuring that there is no cross contamination between test sites.	To remove excess allergen solution and prevent cross contamination of test sites.
	Advise patients not to scratch the test sites whilst waiting for the results to develop	To allow for accurate reading of results.
	Advise patients to report promptly any systemic adverse reaction	To ensure prompt treatment of any adverse reaction
	Results should be read 10-15 minutes after the test. Measure the wheal diameter in mm. For asymmetric wheals measure the longest extent of the wheal in mm and the extent 90^{o} to the first measurement (eg 3x3mm). An imprint of the result can also be made by drawing round the wheal in pen and taking a print using skin tape which can then be stuck onto the results sheet. The flare may also be recorded.	To ensure accurate assessment of the reaction is recorded.
	Any pseudopodia should be noted but not included in the measurement of the wheal	
	A wheal diameter of 3mm larger than the negative control is a positive reaction	
	A wheal response to the negative control indicates dermographism	Document the response to the negative control. Interpretation of other positive results must allow for subtraction of the negative control. The need for further, alternative testing should be considered by the clinician who has requested the test.
	Absence of a wheal at the positive control suggests that a topical or oral medication with antihistaminic properties may have been taken. Repeat the positive control and if still negative record as an invalid test.	Document that the positive control has not reacted. Either repeat the skin tests off anti-histamines /other medication or the requesting clinician can consider specific IgE serology.

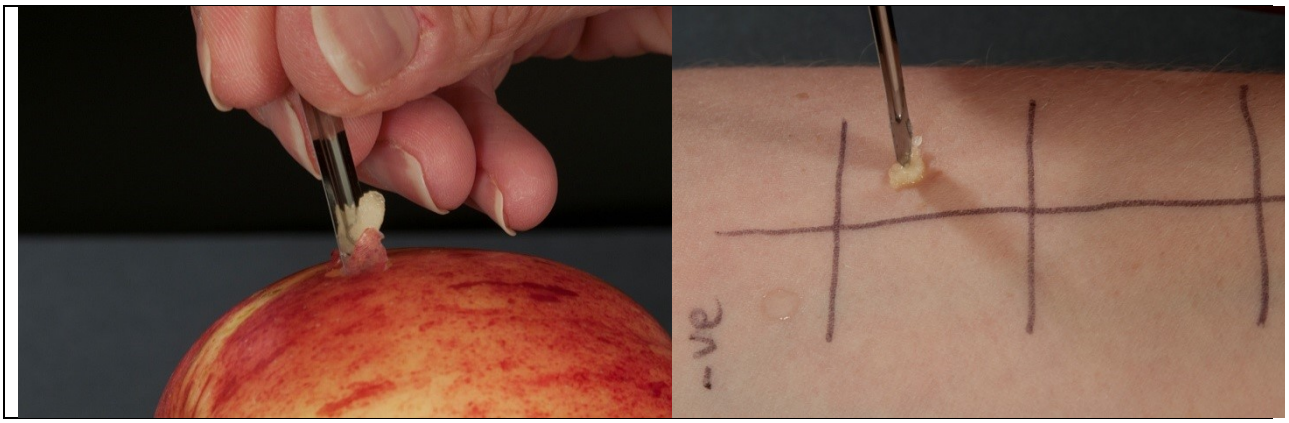
	Advise the patient that the wheals will fade, usually within an hour.	To inform the patient
	Topical 1% hydrocortisone, oral anti-histamines or a cold compress may be given to relieve severe itch in line with a prescription.	To enhance patient comfort and relieve severe itch
	Record the outcome of the test including; • date of test • patient name, date of birth and hospital number • skin prick (SPT) or prick to prick (PPT) method • wheal size in mm • any recent antihistamine medication with date/time of last dose. • name, designation and signature of person performing the SPT	Ensure accurate documentation.

***Prick-to-prick testing with fresh foods**

The food used for testing fruit and vegetables should be fresh and not tinned or cooked as these processes can alter allergenicity.

For fruit / vegetables push lancet into a fleshy and juicy/moist site of the food (through skin if normally eaten) and place a small amount of the food substance onto the skin. Then introduce the lancet into the surface layer of the skin at a 90^{O} angle through the food.

For other foods place a small amount onto the skin, where practical, or crush/grind and make a paste using sterile saline and place this on skin before pricking through it with the lancet.



Interpreting the Skin Prick/ Prick to Prick Test

Ensure that the results are discussed with the patient by an appropriate clinician and, when applicable, allergen avoidance advice is given. It is important to be aware of the distinction between sensitisation (a positive test without clinical allergy) and allergy.

References

1 The skin prick test – European Standards Clinical and Translational Allergy 3:3 http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3565910/

2 Bousquet et al (2012) Practical guide to skin prick tests in allergy to aeroallergens Allergy 67: 18-24 http://onlinelibrary.wiley.com/doi/10.1111/j.1398-9995.2011.02728.x/pdf [accessed 16.01.2015]

3 Fitzsimons R et al (2014) Allergy Nurse Competency Document BSACI http://www.bsaci.org/professionals/nurses-specialising-in-allergies [accessed 16.01.2015]

4 Summary of product characteristics Soluprick Timothy Grass ALK Abello http://www.alk-abello.com/UK/products/soluprickSQ/Lists/Soluprick%20SQ/Timothy%20Grass%20SmPC.pdf [accessed 15.10.2015]

5 UK Resuscitation Council (2008) Emergency Treatment of Anaphylactic Reactions https://www.resus.org.uk/search/?q=anaphylaxis

6 King et al (2010) Paediatric Skin Prick Testing SOP BSACI http://www.bsaci.org/Guidelines/Skin_Prick_Testing.pdf [accessed 16.01.2015]