

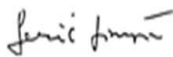



3. Appendix 3: ALABAMA SOP, Skin Prick and Intradermal Allergy Test

Standard Operating Procedure	Skin Prick and Intradermal Allergy Test
Version No.	V4.0

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Standard Operating Procedure

Skin Prick and Intradermal Testing

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 (SPT) and intradermal (IDT) testing (SPT) are methods used to determine the presence of specific Immunoglobulin E (IgE) mediated reactions. SPT and IDT should be performed by an appropriately trained and competent healthcare worker who is also trained in recognition and treatment of anaphylaxis.

4. EXCLUSIONS:

SPT and IDT reactions are inhibited by antihistamines and may be inhibited by tricyclic antidepressants, tetracyclic antidepressants, topical corticosteroids and UV light treatment. Where possible inhibitory medication should be stopped at least 72 hours prior to testing,

Note - Patient's who are taking antihistaminergic medication, might still be suitable to continue with oral challenge

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testing if they do not need SPT.

5. CAUTIONS:

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

6. EQUIPMENT:

SPT and IDT

- PPE - Follow current LTHT guidelines (available on LTHT Intranet)
- Skin Marker/Pen
- Sharps bin
- Tissue Paper
- Micropore tape
- Skin test measure
- Timer (clock/watch)
- Emergency equipment available to treat anaphylaxis.
- ADULT Skin Prick & Intradermal Testing - Medications (**Appendix 1**)

SPT

- Positive control - Histamine 10mg/mL in 50% glycerol and 50% buffered 0.9% sodium chloride
- Negative control - 50% glycerol and 50% buffered 0.9% sodium chloride
- Test allergen solution (Amoxicillin 20mg/ml, +/- index penicillin if different to these). *
- Individual sterile skin prick testing lancets

IDT

- Negative control-normal saline (NB positive control is not used in IDT)
- Test allergen solution (Amoxicillin 20mg/ml, +/- index penicillin if different to these). *
- Needle 30G
- Syringe 1mL
- Alcohol wipe

* Refer to **Appendix 2** for instructions for how to make testing dilutions.

7. PREPARATION:

The procedure should be undertaken in accordance with LTHT Covid-19 Coronavirus Guidelines and local infection control policy.

Perform positive ID Check, discuss procedure with patient and gain verbal consent. Check current medications with patient & SystemOne (see Exclusions & Cautions). Select appropriate test site free from eczema / dermatitis, the preferred site is the forearm.

8. PROCEDURE:**STP and IDT**

1. Ensure the patient is in a comfortable sitting position or, if needle phobic, lying down. Rest arm on a level surface, using a pillow if necessary.
2. Perform hand hygiene and don any outstanding PPE.
3. Remove appropriate garments to expose the testing site (typically skin of the forearm).

4. Assess the injection site for signs of inflammation, oedema, infection, and skin lesions.

9. SPT

5. Ensure test site is free from body lotion and moisturisers. The Test site should be hygienically clean but does not need to be cleaned with alcohol or antiseptic. Do not rub the area as this will create erythema.
6. Beginning with the positive control and ending with the test allergens (Amoxicillin, +/- index penicillin if different to these) use micropore tape to mark the test sites approximately 2.5cm apart, using first letter of allergen/control being tested (e.g. +, -, A). Place marked micropore tape on midline of forearm. Avoid the skin creases (elbow and wrist).
7. Place one drop of each selected allergen solution on the skin next to relevant marked site.
8. Using gentle pressure, push the lancet through allergen solution and into the surface layer of the skin.
9. Discard lancet into sharps bin.
10. Repeat the procedure for each allergen and the controls using a new lancet each time.
11. Remove surplus allergen by blotting test sites with tissue paper ensuring that no cross contamination between test sites occurs.

10. IDT (if SPT is negative and if indicated please proceed to IDT)

1. Attach 30G needle to 1ml syringe containing test solution / article.
2. Apply gloves and clean the injection site with a swab saturated with isopropyl alcohol 70% and apply gloves.
3. Remove the needle sheath and hold syringe with the dominant hand with the bevel of needle pointing up.

4. Beginning with the negative control use the non-dominant hand to stretch skin over the site with forefinger and thumb.
5. With the syringe almost against the patient's skin, insert the needle into the skin at an angle of 10–15° and advance through the epidermis so the needle tip can be seen through the skin.
6. Inject medication slowly. It is not necessary to aspirate as the dermis is relatively avascular.
7. While injecting medication, a bleb (resembling a mosquito bite) will form.
8. When a 3-5mm bleb is observed withdraw the needle rapidly. Do not massage the site.
9. Dispose of contaminated sharps into sharps bin.
10. Using skin marker draw around the formed bleb.
11. Repeat the procedure for each allergen and the controls.

11.SPT and IDT

1. Advise patients not to scratch the test sites whilst waiting for the results to develop.
2. Ask patients to report any systemic adverse reaction (e.g. dyspnoea, dizziness).
3. Results should be read 15-20 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° to the first measurement (e.g. 3x3mm).
4. Record the outcome of the test in the source document.
5. Topical 1% hydrocortisone, oral anti-histamines or a cold compress may be given to relieve severe itch in line with a prescription.

12.INTERPRETATION:

Test sites are examined for wheal or flare after 15 - 20 minutes has elapsed. For SPT any site with a wheal diameter of ≥ 3 mm compared to negative control is considered a positive result. For IDT any site with a hive and associated redness and swelling outside the marked area ≥ 3 mm compared to the initial bleb or negative control is considered a positive result.

13.COMPLICATIONS:

Mild pruritus localised to positive test sites is the most common complication and usually resolves with no intervention.

Although SPT is a common procedure and regarded as safe, the possibility of a systemic reaction remains a possibility.

14.AFTERCARE:

If no adverse reaction has occurred, the patient is free to leave the clinic.

In case of late phase response, the patient must be instructed to call 111 or visit their local Emergency Department should they develop symptoms of dyspnoea, wheezing, dizziness or severe pruritus.

15. Appendix 3.1: ADULT: Skin Prick & Intradermal Testing - Medications

Have any antihistamines, corticosteroids, anti-depressants, antipsychotics or ACE inhibitors been taken recently?

Yes / No (Please circle)

If YES: Drug: Last taken:

Drug: Last taken:

Clinic date:

First Name:		Surname: (Block Letters)	
Hospital No:	NHS No:	DOB:	
Consultant:		Ward:	Hospital:
(Use addressograph if available)			

Drug/Allergen	Dilution	SPT Drug/Allergen Required	Wheal Size (mm) Time:	IDT Drug/Allergen Required	Wheal Size (mm) at time zero Time:	Wheal Size (mm) at 15mins Time:
Positive Control - Histamine	10mg/mL	Prescriber Initials		Prescriber Initials		
Negative Control - Sodium Chloride	0.9%	Prescriber Initials		Prescriber Initials		
AMOXICILLIN	20mg/mL	Prescriber Initials		Prescriber Initials		
BENZYL PENICILLIN	6mg/mL	Prescriber Initials		Prescriber Initials		
CO-AMOXICLAV	20mg/mL	Prescriber Initials		Prescriber Initials		
FLUCLOXACILLIN	20mg/mL	Prescriber Initials		Prescriber Initials		

Prescribed by:	Signature:	PRINT name and contact details:	Date:
SPT administered by:	Signature:	PRINT name and contact details:	Date:
IDT administered by:	Signature:	PRINT name and contact details:	Date:

Compiled by: *JAPM* Date: 19 Aug 2019 Approved by: *Shweta Datta* Date: 02 Sep 2019

Skin Prick & Intradermal Testing - Medications

Version 1.0 02/09/2019

16. Appendix 3.2: Dilution instructions

Amoxicillin		
Strength /formulation		250mg powder for injection
Skin prick test	Concentration	20mg/ml
	Dilution instructions	Reconstitute the 250mg vial with 5mls water for injection to give approx. 50mg/ml solution. Withdraw 0.4mls and dilute with 0.6mls sodium chloride 0.9% to give a 20mg/ml solution
Intradermal test	Concentration	20mg/ml
	Dilution instructions	As above
Comments		If the specified formulation is not available then the dilution instructions will need to be amended accordingly. Once reconstituted products must be used immediately.
References		Brockow, K et al. Skin test concentrations for systemically administered drugs -- an ENDA/EAACI Drug Allergy Interest Group position paper. <i>Allergy</i> . 2013 Jun; 68(6):702-12. doi: 10.1111/all.12142. Epub 2013 Apr 25.

Amoxicillin 500mg		
Undiluted strength /formulation		500mg powder for injection
Skin prick test	Concentration	20mg/ml
	Dilution instructions	<ol style="list-style-type: none"> 1. Reconstitute the 500mg vial with 10mls water for injection to give a 50mg/ml solution. 2. Withdraw 4mls (200mg) and dilute with 6mls sodium chloride 0.9% to give a 20mg/ml solution.
Intradermal test	Concentration	20mg/ml
	Dilution instructions	As above
Comments		If the specified strength and formulation is not available then the dilution instructions will need to be amended accordingly.
References		Brockow, K et al. Skin test concentrations for systemically administered drugs -- an ENDA/EAACI Drug Allergy Interest Group position paper. <i>Allergy</i> . 2013 Jun; 68(6):702-12. doi: 10.1111/all.12142. Epub 2013 Apr 25.

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Benzyl penicillin		
Strength /formulation	600mg powder for injection	
Skin prick test	Concentration	6mg/ml
	Dilution instructions	Reconstitute the 600mg vial with 10mls water for injection to give 60mg/ml. Withdraw 0.1mls (6mg) and dilute this with 0.9mls sodium chloride 0.9% to give a 6mg/ml solution
Intradermal test	Concentration	6mg/ml
	Dilution instructions	As above
Comments	If the specified formulation is not available then the dilution instructions will need to be amended accordingly. Once reconstituted products must be used immediately.	
References	Brockow, K et al. Skin test concentrations for systemically administered drugs -- an ENDA/EAACI Drug Allergy Interest Group position paper. <i>Allergy</i> . 2013 Jun; 68(6):702-12. doi: 10.1111/all.12142. Epub 2013 Apr 25.	

Appendix 3.2: Dilution instructions

Co-amoxiclav		
Strength /formulation	1.2g, powder for solution for injection /infusion	
Skin prick test	Concentration	20mg/ml
	Dilution instructions	Reconstitute with 20mls water for injections to give 50mg /ml Withdraw 0.4mls (20mg) and dilute up to 1ml of sodium chloride 0.9% (to give 20mgs/ml)
Intradermal test	Concentration	20mg/ml
	Dilution instructions	As above
Comments	<p>Note the concentration above (20mg/ml) only takes into account the amoxicillin component (not the clavulanic acid component)</p> <p>If the specified formulation is not available then the dilution instructions will need to be amended accordingly.</p> <p>Once reconstituted products must be used immediately</p>	
References	Brockow, K et al. Skin test concentrations for systemically administered drugs -- an ENDA/EAACI Drug Allergy Interest Group position paper. <i>Allergy</i> . 2013 Jun; 68(6):702-12. doi: 10.1111/all.12142. Epub 2013 Apr 25.	

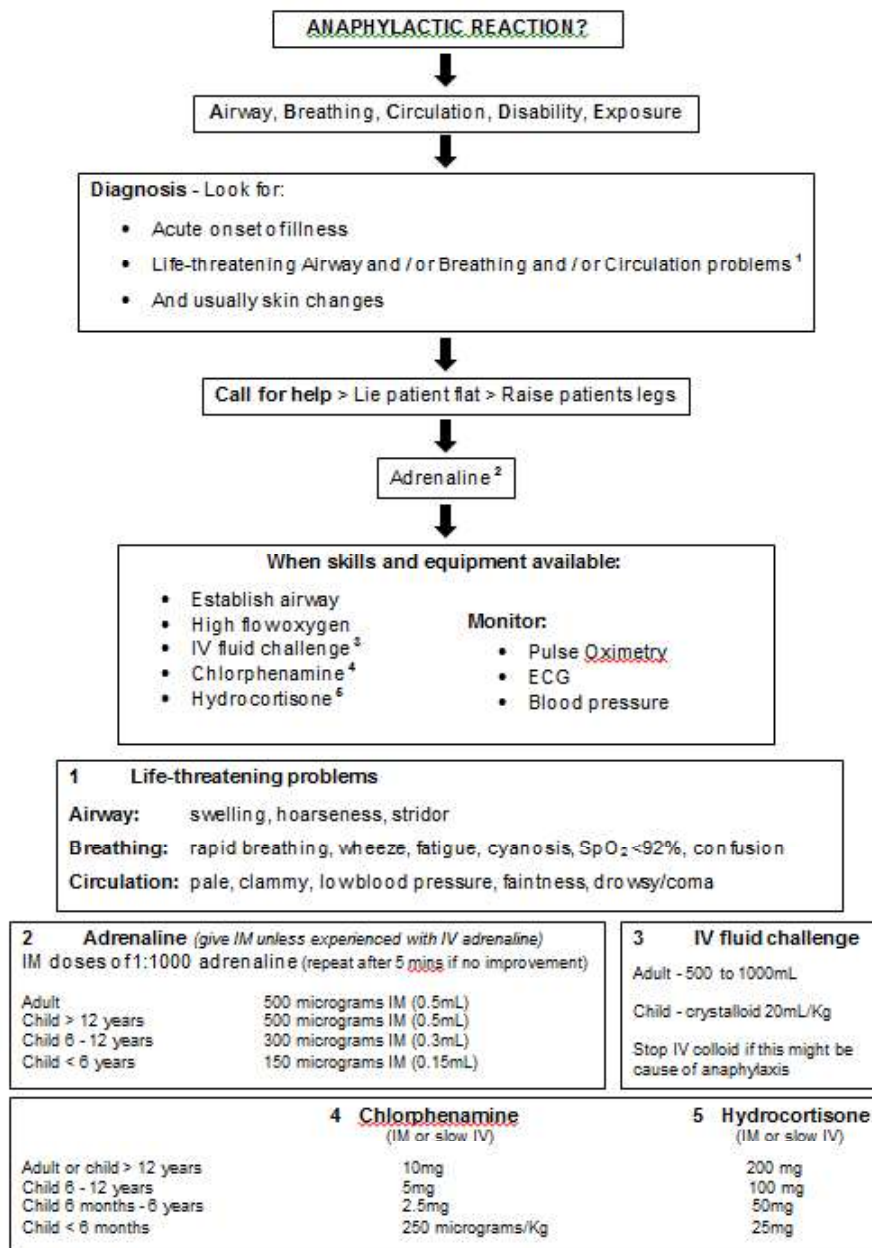
Flucloxacillin		
Strength /formulation	250mg, powder for solution for injection /infusion	
Skin prick test	Concentration	20mg/ml
	Dilution instructions	Reconstitute with 5mls of water for injection to give 50mgs/ml. Withdraw 0.4mls (20mg). Then dilute up to 1mls with sodium chloride 0.9% to give 20mgs/ml
Intradermal test	Concentration	20mg/ml
	Dilution instructions	As above.
Comments	<p>If the specified formulation is not available then the dilution instructions will need to be amended accordingly</p> <p>Once reconstituted products must be used immediately</p>	
References	Brockow, K et al. Skin test concentrations for systemically administered drugs -- an ENDA/EAACI Drug Allergy Interest Group position paper. <i>Allergy</i> . 2013 Jun; 68(6):702-12. doi: 10.1111/all.12142. Epub 2013 Apr 25.	

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Flucloxacillin 500mg		
Undiluted strength /formulation		500mg, powder for solution for injection /infusion
Skin prick test	Concentration	20mg/ml
	Dilution instructions	<ol style="list-style-type: none"> 1. Reconstitute the 500mg vial with 10mls water for injection to give 50mg/ml 2. Withdraw 0.4mls (20mg) and dilute to 1ml with sodiumchloride 0.9% (= 20mgs/ml)
Intradermal test	Concentration	20mg/ml
	Dilution instructions	As above
Comments		If the specified strength and formulation is not available then the dilution instructions will need to be amended accordingly.
References		Brockow, K et al. Skin test concentrations for systemically administered drugs -- an ENDA/EAACI Drug Allergy Interest Group position paper. <i>Allergy</i> . 2013 Jun; 68(6):702-12. doi: 10.1111/all.12142. Epub 2013 Apr 25.

17.Appendix 3.3: Anaphylactic Reaction flowchart



Reference: <https://www.resus.org.uk/anaphylaxis/emergency-treatment-of-anaphylactic-reactions/> [Accessed 10 June 2019].

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ALABAMA SOP- Oral Challenge Test - Penicillins Version 5.0 06/05/2022