

# OCCUPATIONAL DISEASE

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## INVESTIGATIONS IN OCCUPATIONAL DERMATOSES

### PATCH TEST

**Indication:** To detect the causative allergen responsible for contact allergic Occupational Dermatitis.

**Contraindications:** Test is not performed if patient is

- pregnant
- having acute dermatitis
- taking prednisolone >20mg daily for the past 2 weeks prior to test
- calcineurin inhibitors

**Method:** Patient attends Dermatology clinic on Day 1, 3 and 5.  
Standard series of allergen will be applied on patient's back with the aid of Finn/IQ Chambers.  
Patient is advised not to wet the back & to avoid oral steroid and antihistamine.  
Readings will be done according to International Contact Dermatitis Research Group (ICDRG) classification on Day 3 and Day 5 after the allergens have been removed from patient's back.

**Results:** A positive patch test will result in an itchy red, papular or vesicular infiltrated patch at the site of allergen.

**Patient education:** Patient will be informed by attending staff regarding

- The probable sources of the causative allergen that need to be avoided if possible.
- The use protective gear to prevent contact with the allergen
- Patient will also be given an allergy card.

**Notification** WEHU & DOSH will be notified by attending staff.

**Worse Case Scenario:**

- If accidental laceration of skin occurs when trying to cut the micropore during Patch test, clean the wound with antiseptic and apply topical antibiotic.
- If dermatitis recurs during patch test, patient is allowed to use topical steroid but not to take antihistamine is possible.
- If urticaria occurs during patch test, remove the patch test and look for allergen causing the urticaria. Then clean the patient's patch with saline. Cover patient with antihistamine and calamine lotion. If the pruritus is severe, give a stat dose of systemic steroid
- If patient develop severe reaction at patch test site, clean it with normal saline and apply topical steroid at the reaction site.
- If patient develop angry back syndrome (reaction to multiple allergens) abort the patch test and cover patient with antihistamine and topical steroid. Patient may require repeating the test after a few weeks.

## PHOTOPATCH TEST

**Indication:** To detect the causative allergen responsible for photocontact allergic occupational dermatitis.

**Contraindications:** Test is not performed if patient is

- pregnant
- having acute dermatitis
- taking prednisolone > 20mg daily for the past 2 weeks prior to test.
- Calcineurin inhibitors
- Exposed excessively to sunlight recently (e.g. went to the beach or swimming)

**Method:** Patient has to attend Dermatology clinic on Day 1, 2, 3 and 5. Standard series of photoallergen will be applied on patient's back in duplicates with the aid of Finn Chambers on Day 1. Patient is advised not to wet the back & to avoid oral steroid and antihistamine. On Day 2, the photoallergens on the test zone are removed & subsequently the test zone is irradiated with 10J of UVA. *If patient has positive photo test to UVA light, then the only 5J of UVA will be utilise in the test.* The control photoallergens are protected from sunlight from Day 1 to Day 5. Readings will be done according to International Contact Dermatitis Research Group (ICDRG) classification on Day 3 and Day 5 after the allergens have been removed from patient's back.

**Results:** A positive photopatch test will result in an itchy red, papular or vesicular infiltrated patch at the site of the irradiated photoallergen but no reaction is detected on the control photoallergen site.

**Patient education:** Patient will be informed by attending staff regarding

- The probable sources of the causative allergen that need to be avoided if possible.
- The use protective gear to prevent contact with the allergen
- Patient will also be given an allergy card.

**Notification** WEHU & DOSH will be notified by attending staff.

***Worse Case Scenario:***

- If the patient develops skin burn or blisters during Photopatch test, abort the test. Remove the patch and clean the back with normal saline. Cover patient with antihistamine, analgesic and dab the blister with normal saline. When the lesion desquamate, stop dabbing with saline and moisturise the skin with aqueous cream..

**ROAT (Regular open application test)**

**Indication:** To detect the causative allergen responsible for contact allergic occupational dermatitis.

**Contraindications:** Test is not performed if patient is

- pregnant
- having acute dermatitis
- taking prednisolone > 20mg daily for the past 2 weeks prior to test.
- Calcineurin inhibitors

**Method:** Check to ensure chemical to be tested is not corrosive (8 > pH of chemical > 6)  
Then apply and rub chemical on cubital fossa or dorsum of wrist for 10 minutes.  
Repeat this application and rubbing twice a day for 1 week.  
Reading is read at Day 7 at Dermatology clinic.

*If the allergen tested is topical steroid, then the reading should be done at Day 14.*

**Results:** Positive ROAT test is signifying by pruritic dermatitis at the test site.

**Patient education:** Patient will be informed by attending staff regarding

- The probable sources of the causative allergen that need to be avoided if possible.
- The use protective gear to prevent contact with the allergen
- Patient will also be given an allergy card.

**Notification** WEHU & DOSH will be notified by attending staff.

***Worse Case Scenario:***

- If dermatitis recurs during ROAT test, patient is allowed to use topical steroid but not to take antihistamine is possible.

- If urticaria occurs during ROAT test, clean the test site with saline. Cover patient with antihistamine and calamine lotion. If the pruritus is severe, give a stat dose of systemic steroid
- If patient develop severe reaction at patch test site, clean it with normal saline and apply topical steroid at the reaction site.

## SHORT CONTACT PATCH TEST

Indication:	To detect the causative allergen responsible for occupational contact urticaria
Contraindications:	Test is not performed if patient is <ul style="list-style-type: none"> <li>• pregnant</li> <li>• having acute allergic reaction.</li> <li>• taking prednisolone &gt; 20mg daily for the past 2 weeks prior to test.</li> <li>• Calcineurin inhibitors</li> </ul>
Method:	<p>Patient has to attend Dermatology clinic on Day 1 only.</p> <p>Standard series of allergen will be applied on patient's forearm with the aid of Finn Chambers.</p> <p>Allergen is removed after 30minutes and readings will be done subsequently.</p> <p><i>Ensure the resuscitation kit is nearby in case patient develops severe reaction to the allergen.</i></p>
Results:	A positive short contact patch test will result in an itchy red wheal (urticaria) at the site where the allergen was applied.
Patient education:	<p>Patient will be informed by attending staff regarding</p> <ul style="list-style-type: none"> <li>• The probable sources of the causative allergen that need to be avoided if possible.</li> <li>• The use protective gear to prevent contact with the allergen</li> <li>• Patient will also be given an allergy card.</li> </ul>
Notification	WEHU & DOSH will be notified by attending staff.

### **Worse Case Scenario:**

If urticaria occurs during patch test, remove the patch test and look for allergen causing the urticaria. Then clean the patient's patch with saline. Cover patient with antihistamine and calamine lotion. If the pruritus is severe, give a stat dose of systemic steroid

## USE TEST

Indication:	To confirm patient has contact urticaria to rubber gloves
Contraindications:	Test is not performed if patient is <ul style="list-style-type: none"> <li>• pregnant</li> <li>• having acute allergic reaction</li> <li>• taking prednisolone &gt; 20mg daily for the past 2 weeks prior to test.</li> <li>• Calcineurin inhibitors</li> </ul>
Method:	<p>Patient has to attend Dermatology clinic on Day 1 only.</p> <p>Patient wet both his /her hands.</p> <p>A rubber glove stump is applied on the right finger and a plastic glove stump is applied on the left finger as control.</p> <p>Readings will be done at 20 minutes later after the glove stumps are removed.</p> <p><i>Ensure the resuscitation kit is nearby in case patient develops severe reaction to the allergen.</i></p>

**Results:** A positive *use* test will result in an itchy red patch or urticaria at the finger covered by rubber glove stump and not on the control finger.

A positive reaction at both rubber and plastic rubber glove stump does not indicate positive *Use* test. Patient is probably reacting to glove stump because of occlusion of the fingers.

**Patient education:** Patient will be informed by attending staff regarding

- Avoidance of rubber gloves
- The use of synthetic or polythene gloves as alternative to rubber gloves
- Patient will also be given an allergy card.

**Notification** WEHU & DOSH will be notified by attending staff.

***Worse Case Scenario:***

If urticaria occurs during and before the 30 minutes, abort use test. Remove the glove stump and then clean the patient's fingers with saline. Cover patient with antihistamine and calamine lotion. If the pruritus is severe, give a stat dose of systemic steroid.

***PRICK TEST***

**Indication:** To confirm patient has contact urticaria to rubber gloves

**Contraindications:** Test is not performed if patient is

- pregnant
- having acute dermatitis
- taking prednisolone > 20mg daily for the past 2 weeks prior to test.
- Calcineurin inhibitors

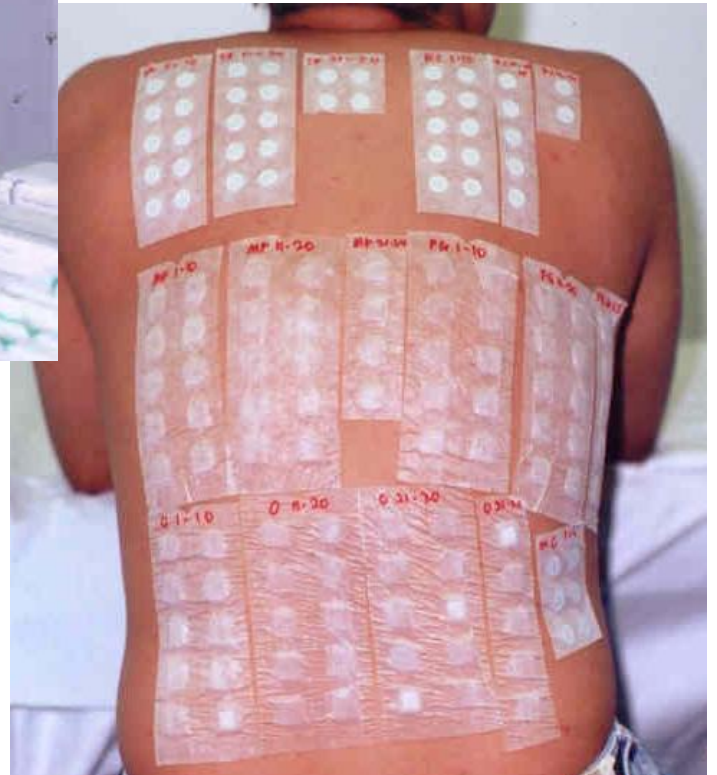
**Method:** Patient has to attend Dermatology clinic on Day 1 only.  
1mm deep lancet is used to prick the skin through the drop of the following solution.  
A drop of histamine and drop of normal saline are used as positive and negative control respectively.  
A drop of standard latex effluent is used as test solution.  
Readings will be done at 20 minutes after the skin prick.  
*Ensure the resuscitation kit is nearby in case patient develops severe reaction to the allergen.*

**Results:** A positive *prick* test will result in an itchy urticaria papule larger than 3mm in diameter at the rubber effluent prick site. Positive urticaria is noted at the histamine prick site and no urticaria is noted at the saline prick site.

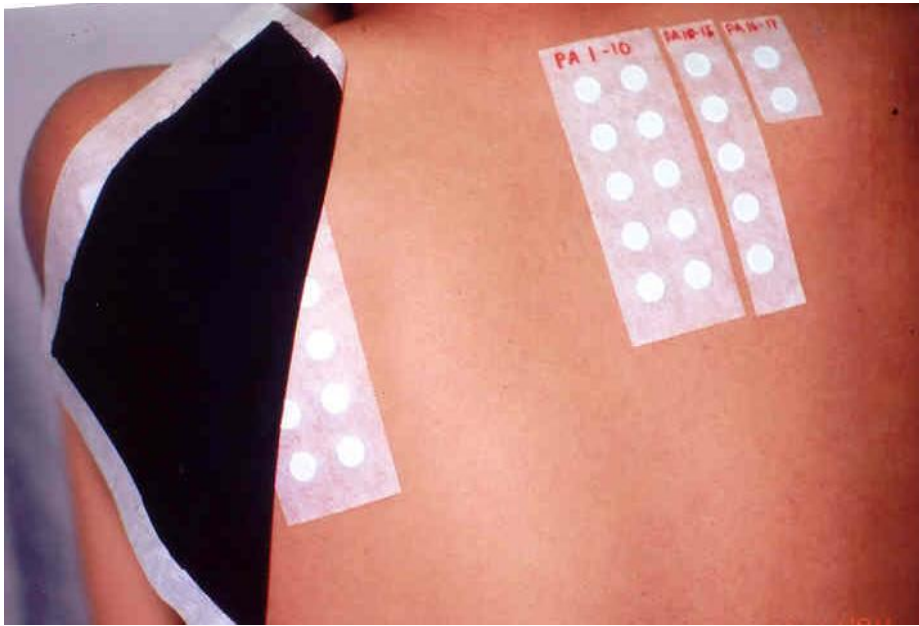
**Patient education:** Patient will be informed by attending staff regarding

- avoidance of rubber gloves
- The use of synthetic or polythene gloves as alternative to rubber gloves
- Patient will also be given an allergy card.

**Notification** WEHU & DOSH will be notified by attending staff



**CLOSED PATCH TEST**



**PHOTO  
PATCH TEST**





**USE TEST**

