

Patch Testing Hands-on Workshop

Eastern Allergy Conference 2025

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Learning Objectives

- Demonstrate how to load/mix and apply patch tests
- Learn to interpret patch test results including identifying false positives and false negatives
- Review most common contact allergens

Background

- Contact dermatitis affects up to 13 million people and causes 90% of occupational skin disease
- Most common sites include generalized, hands and face
- It is due to either irritation or allergic sensitization
- Common allergic triggers: **M**etals, **M**edicines and **M**ake-up
- Diagnosis is confirmed with patch testing
- Management involves identification of triggers, avoidance, use of alternative safe products and topical corticosteroids

Patch testing is the only practical,
scientific & objective
method to confirm diagnosis of ACD

Who To Patch Test?

- Chronic eczematous dermatitis
- Persistent or recalcitrant dermatitis
- Occupational dermatitis
- Hand, leg or foot dermatitis
- Facial dermatitis (eyelid)
- Stasis dermatitis
- Atopic dermatitis patients who fail to improve
- Systemic contact dermatitis after ingestion of foods or medications
- Dermatitis with unusual distribution

Would you patch this patient?



How to Patch Test



Patch tests should be applied to the upper back (ideally)



2.5 cm lateral to the spinal column



Free of eczematous lesions/other skin lesions (AD, Psoriasis, tinea, pityriasis)



Free of hair (remove hair 1-2 days prior patch placement and emollients to ensure adherence)



Patients need to abstain from bathing/exercise while patches in place

Patch Test Materials

Materials
suspended on
chamber attached
to adhesive
background

- Square or round
- Aluminum vs plastic

Personal products

- As is vs diluted

Workplace
products

- Review MSDS
- Some cannot be placed



Preparing the PT

Optimally prepared
at time of
placement

- Petrolatum 24-48 hours
- Fragrances, acrylates, aqueous based allergens immediately prior

On chambers

- 5 mm ribbon petrolatum-based
- One drop liquid to paper disc/chamber

Remember left to
right reversed when
placed on back

- Start number 1 upper right chamber



Schmidlin KS et al, JACI In Practice. A Hands-on Approach to Contact Dermatitis and Patch Testing. June 2020

Applying the PT

- Patient sitting upright, comfortable position, shoulders flexed
- Apply patch from bottom up with firm pressure
- After PT placed mark top and bottom numbers
 - (1,5,6,10 etc..)
 - Fluorescent pen or marker
 - Remarking done at 48-hour reading
- Once PT placed can reinforce with tape



When to read PT

- Remove PT 48 hours for First Reading
 - Wait 20 minutes for erythema to recede
- Second Reading 72-96 hours
 - Look for crescendo responses
- Third Reading Day 7-10
 - Helpful for metals, corticosteroids, dyes, antibiotics







Guide to Patch Test Results



?

?

Doubtful Reaction

+

+

Weak Positive Reaction

++

++

Strong Positive Reaction

+++

+++

Extreme Positive Reaction

IR

IR

Irritant Reaction

faint macular erythema only

erythema with infiltration, possibly papules

erythema, infiltration, edema, and vesicles

bullas erythema with coalescing vesicles

pustules, patchy follicular or non homogenous erythema without infiltration, or scabbing, are usually signs of irritation and do not indicate allergy

erythema in patients of color may be more difficult to appreciate

19

23



20



Irritant Reaction



Cobalt



Disperse Blue



Potassium Dichromate
Glutaraldehyde
Disperse Orange



Common Positive Allergens on Patch Testing (NACDG)

Nickel Sulfate	20.1%
Fragrance Mix I	11.9%
MI (preservative)	10.9%
Neomycin	8.4%
Bacitracin	7.4%
Cobalt Chloride	7.4%
Balsam of Peru (Fragrance)	7.2%
PPD (Hair Dye)	7.0%
Formaldehyde (Preservative)	7.0%

Recent reports have MI at 13.4%. Important to test for both MI and MCI

Common Positive Allergens by Distribution

Face (Including perioral and periorbital)	Botanical ingredients, Fragrance mix, BOP, Nickel, Ectopic transfer (tosylamide, formaldehyde resin, methacrylates), Lanolin
Scalp and Neck	Fragrance mix, BOP, Quaternium-15, Cocamidopropyl betaine, Acrylates, Botanicals, PPD, Glyceryl thioglycolate
Hand	PPD, Formaldehyde, BOP, Nickel, Fragrance Mix, Topical Antibiotics, Rubber chemicals (thiuram, carbamates, mercaptobenzothiazole)
Generalized	Formaldehyde, Textile dyes (disperse blue dye)

Location is a key factor in diagnosing ACD and picking correct patch testing panels!

Treatment

- Identify and avoid contact with allergens and irritants
 - Give exposure list (synonyms & sources)
 - Give list of safe products to use
 - Skinsafe.com, ACDS CAMP (American Contact Dermatitis Society Contact Allergen Management Program)
- Use alternatives & substitutions if possible
 - Cover nickel plated objects
 - Wash formaldehyde containing garments before wearing
 - Use of gloves & barriers
- Supportive care: oral antihistamines for itch
- Topical corticosteroids
- Oral corticosteroids acutely for brief episodes
- Other modalities: UV light