Learning Objective

Upon completion of this session, participants should be able to:

1. Identify clinical, administrative and reimbursement strategies for patch testing in their practice.
Clinical Strategies

Who to Patch Test

Any patient with:
- Chronic, itchy, eczematous dermatitis
- Persistent or recalcitrant dermatitis
- Atopic Dermatitis patients who fail to improve
- Occupational dermatitis (with caution)
- Systemic contact dermatitis
- Hand, leg or foot dermatitis
- Stasis dermatitis
- Facial dermatitis (eyelid)
- Dermatitis with unusual distribution

Selecting Allergens

Screening Patch Test
T.R.U.E. Test® (35 allergens, currently the only FDA approved PT for > 6 y.o.)

Expanded Patch Test
North American Standard Series (~70-80 allergens)
ACDS Core Allergen Series (80 allergens)

Allergens grouped for specific exposure
(hairdresser, shoes, plants, vehicles, metals, antibiotics, corticosteroids, photoallergens, etc.)

Patient Products

Allergens from cosmetic & other industry

THE TRUE VALUE OF THE T.R.U.E. TEST®

- The usefulness of PT is enhanced with the number of allergens tested
- Allergens not found on commercially available screening series in the US frequently give relevant reactions
- Personal products is a useful supplement especially in facial or periorbital dermatitis
- The T.R.U.E. Test® may serve as triage or a screening tool in an allergists' practice
- Occupational exposures may benefit from early referral for supplemental testing

T.R.U.E. TEST® (36) vs. NACDG Screening Series

What's the difference?

- Hypothetical detection rate of TT® vs. NACDG: 57.9%–70.4%
- Antigens on TT® not on NACDG
  - Thimerosal
  - gold
  - quinoline mix
- Individual vs. “mixes”
  - caine mix (TT®) vs. benzocaine & dibucaine (NACDG)
  - parthenolide (TT®) vs. sesquiterpene lactone mix & compositae mix (NACDG)
T.R.U.E. vs Finn loaded Allergens

Different Sensitivities for some allergens tested in both TT and Finn

- T.R.U.E. Test® Misses:
  - 50% Fragrance
  - 62% Balsam of Peru
  - 56% Thiuram

- T.R.U.E. Test® better for:
  - Nickel

- Finn Misses:
  - 25% nickel
  - 21% neomycin
  - 28% MCI/MI

- Finn better for:
  - Formaldehyde

Different Sensitivities for some allergens tested in both TT and Finn

The top 15 most frequently positive allergens:
- 2 metals - nickel & cobalt
- 2 antibiotics - neomycin & bacitracin
- 4 fragrances
- PMI, PMI II, M. pereirae (BOP), hydroperoxides of linalool
- 4 preservatives
- M, MCl/MII, BIT, formaldehyde
- 1% & 2% p-phenylenediamine
- propolis

Primary Allergens
Secondary Allergens

1. Bacitracin
2. Budesonide
3. Carba mix
4. Cobalt chloride
5. Colophonium
6. Compositae mix/dandelion extract
7. Disperse blue
8. Ethylenediamine
9. Formaldehyde
10. Fragrance mix 1
11. Fragrance mix 2
12. Fragrance mix 3
13. Lanolin alcohol
14. MCI/MI
15. Myroxylon pereirae (Balsam of Peru)
16. Neomycin sulfate
17. Nickel sulfate
18. Propylene glycol
19. Quaternium 15
20. Tixocortol pivalate

Allergens panels developed based on recommendations from North American Contact Dermatitis (NACD) panel & American Contact Dermatitis Society (ACDS)
- Updated regularly to include most relevant allergens

Patch Test Recommendations for Children 6-12 y.o.
Consider CD in AD patients who have:
- Dermatitis that
  - worsens
  - changes distribution
  - fails to improve
  - immediately rebounds
- Atypical distribution/pattern
  - head predominance
  - hand or foot
  - eyelid predominance
  - cheilitis/perioral predominance
- Therapy-resistant hand eczema
- Adult- or adolescent-onset AD w/o childhood eczema
- Severe or widespread dermatitis before initiating systemic immunosuppressant

Consider the following allergens in AD
- Metals (nickel, cobalt, potassium dichromate)
- Fragrances (FM, Balsam of Peru)
- Preservatives
- Topical emollients, corticosteroids, antibiotics, antiseptics
- Patient’s products

### CONCENTRATION FOR NON STANDARDIZED PT

<table>
<thead>
<tr>
<th>Product</th>
<th>Concentration</th>
<th>Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make up: non volatile (e.g. foundation, powder, eye shadow, eye-liner, moisturizer, antiperspirant)</td>
<td>As is</td>
<td>dry</td>
</tr>
<tr>
<td>Make up: volatile (e.g. mascara, after shave lotion)</td>
<td>Apply to chamber and wait 5 min before application</td>
<td></td>
</tr>
<tr>
<td>Hair spray</td>
<td>As is</td>
<td>dry</td>
</tr>
<tr>
<td>Shampoo, soap</td>
<td>Doubtful value, test ingredients</td>
<td></td>
</tr>
<tr>
<td>Perfume, cologne, toilet water</td>
<td>Apply to chamber and wait 5 min before application</td>
<td></td>
</tr>
<tr>
<td>Nail polish</td>
<td>Paint on chamber as is and allow to dry for at least 15 min</td>
<td></td>
</tr>
<tr>
<td>Skin care preparations (body/hand cream, moisturizers)</td>
<td>As is</td>
<td></td>
</tr>
<tr>
<td>Baby products (e.g. cream, powder, lotion, oil)</td>
<td>As is</td>
<td>dry</td>
</tr>
<tr>
<td>Topical medications: (antibacterial, corticosteroids)</td>
<td>As is or 20%</td>
<td></td>
</tr>
<tr>
<td>Clothing, shoes, gloves</td>
<td>2 x 2 cm moisten in saline, minimum 10mm punch</td>
<td></td>
</tr>
<tr>
<td>Foods</td>
<td>As is or 50%</td>
<td></td>
</tr>
</tbody>
</table>
| - cauliflower, clove, spice, fruit
- garlic, onion | | |
| Household & industrial products should only be tested after determining their safety from MSDS information and using non-irritating patch test concentrations based on an authoritative text | Refer to Occupational Health Care Professional | |

### Patch Testing Preparations

- Majority of adults on >20 mg/day of prednisone have diminished skin test reactivity
- less understood for children
- Avoid TCS or TCI on test site 5-7 days before PT
- Avoid UV exposure of test site 5-7 days before PT
- Number & diagram chambers correctly
- 5-mm ribbon of petrolatum based antigen is sufficient
- For liquid antigens, apply 1 drop of liquid on filter paper disk in the Finn chamber
Pre Loading Allergens

Ideally tests would be prepared at the time they are placed.

Allergen in Petrolatum can be prepared ahead of time except….

Avoid early preparation of acrylates, fragrances, and all allergens in aqueous vehicle.

Avoid the midback (2.5 cm lateral spine)

Label

Reinforce

Nightmares on Application Day

The eczema flare
- remove hair 1-2 days prior to PT

The hairy back
- no emollients on day of PT for good adherence

The oily back

The Tattoo

The “Right Time to Read”

Most true allergic reactions occur between 72-96 hours.

Allergens that may peak early
- thiuram mix
- carbamix
- balsam of Peru

Allergens that Disappear after 5 Days
- Balsam of Peru
- Benzoic Acid
- Disperse Blue #124
- Fragrance mix
- Mercury
- Methylisothiouronium/phenylenediamine
- Oxygallate

Allergens that may peak late
- Metals
  - Gold
  - Potassium Dichromate
  - Nickel
  - Cobalt
- Topical Antibiotics
  - Neomycin
  - Bacitracin
- Topical Corticosteroids
- PPD


PATCH TEST READING

- Two readings:
  - 1st reading after 48 hours
  - 2nd reading ~3, 4 or 7 days after application

1 vs. 2 readings
- 2nd reading helps distinguish irritant from allergic responses
- 30% of (-) tests at 48 hrs. may be (+) on delayed readings

Characterize Reactions

Irritant Morphology
- Pustules, Dry Skin, Scaling, Petechiae, Shiny Skin, Cigarette Paper Appearance

Expected Discoloration
- Dye retention

Unique Appearance

Characterize Reactions

Allergic Morphology
- Erythema, infiltration & edema filling application site
  - Papules
  - Vesicles, Bullae

Determining Relevance

- **Definite**
  - (+) "use test" with suspected item or (+) PT with the object or product
- **Probable**
  - Suspected allergen is verified in known skin contactants with a consistent clinical presentation
- **Possible**
  - If patient’s skin is in contact with materials that likely contain the suspected allergen
- **Past**
  - Patient no longer has exposure to the (+) allergen
CAUSES OF FALSE POSITIVE REACTIONS

- Use of irritant substances
  - Sharply demarcated
- Pressure reaction
  - Confined to disc area
  - Shiny, often w/ blister
  - Burning or painful

Angry Back Syndrome
- Marked 2+ to 3+ surrounded by (+/-) or (+) responses in contiguous site
- Excited Skin Syndrome

Gold:
- In TRUE Test® (routine epicutaneous PT)
- May be late reactor (as late as 3 weeks)
- Persistent PT reactions (as long as months)
- Clinical relevance of (+) PT has long been a matter of debate
  - PT (+) reported f as high as 30.7%
  - 2 largest studies show clinical relevance in only 10-15%
- Possible relevance in
  - suspected jewelry allergy
  - patients with facial or eyelid dermatitis
  - gold dental restorations
- Trial of gold avoidance may be warranted if with + PT to gold
- Avoidance period for benefit is long & may only be partial

False Positive reactions to Metals

- Pustular patch reaction
  - Common in atotics
  - Nickel, copper, arsenic & mercuric chloride
  - Minimal pruritus

Cobalt
- False (+) cobalt “poral” reaction
  - Punctate erythema, almost petechial
  - Probably toxic effect of cobalt on acrosyringium (superficial or intraepidermal portion of the sweat duct)
Recommendation Prior to Patch Testing

"Lo.C.A.L. (Low contact allergen) Skin Diet (Zug KA)

Eliminates most common allergens:
- Fragrance
- Formaldehyde Releasing Preservatives
- MCI/MI
- MDG/PE
- Lanolin
- CAPB
- Benzophenone-3
- Cover girl clean fragrance free liquid make-up
- Clinique blushing blush powder blush
- Clinique soft pressed eye shadow
- Max factor vivid impact lip liner-all shades
- Almay hypoallergenic roll-on anti-perspirant/ deodorant
- Cerave moisturizing lotion/ vanicream
- Cetaphil gentle skin cleanser
- Free & Clear shampoo
- Free & Clear hair spray - firm hold

Topical Skin Care Product Databases

- Traditional approach:
  - Give name of the allergen
  - Patient is asked to review package labeling to identify products free of the allergen.
- Since typical allergen names are long, difficult to spell, commonly have numerous complex synonyms, and are often frankly intimidating for patients, compliance with allergen avoidance is frequently difficult
- A Database generating a list of allergens to avoid and comprehensive list of skin care products that are free of their identified allergens
  - Increase patient compliance and faster resolution of clinical disease
  - Decrease required physician for patient education.

Topical Skin Care Product Databases

<table>
<thead>
<tr>
<th>CAMP</th>
<th>CARD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contact Allergen Management Program</strong> (American Contact Dermatitis Society)</td>
<td><strong>Contact Allergen Replacement Database</strong> (MAYO Clinic)</td>
</tr>
<tr>
<td>Web Address</td>
<td>Web Address</td>
</tr>
<tr>
<td><a href="http://www.ContactDerm.org">www.ContactDerm.org</a></td>
<td><a href="http://www.AllergyFreeSkin.com">www.AllergyFreeSkin.com</a></td>
</tr>
</tbody>
</table>

Flow and Staffing

CPT Codes

- **99203** - New Patient Office visit - Consultation visit
- **95044** - Patch application (specify number of tests)
  - May be done in the first visit or placement visit only (can be done by assistant/nurse)
- **99212 or 99213** - Established Patient Office
  - Photo to document integrity of patch
  - Remove patches (can be done by assistant)
  - Wait 30 min
  - Physician does 48 hour read. Important for allergic vs. irritant reactions (crescendo/decrescendo)
- **99214** - Established Patient Office - Read visit
  - Counseling (time based)
  - Provision of safe list

*Modifiers are only necessary on these visits if another problem area is addressed in addition to the patch testing process.*
Coding & Reimbursement Pearls:

ICD-10 Codes for E/M visits

- Allergic Contact Dermatitis, Metals L23.0
- Allergic Contact Dermatitis, Cosmetics L23.2
- Allergic Contact Dermatitis, Unspecified L23.9
- Allergic Contact Dermatitis due to other agents L23.89

Typical Reimbursement Rates

<table>
<thead>
<tr>
<th>Visits</th>
<th>CPT Code</th>
<th>Avg. Fee Schedule</th>
<th>Master Fee Schedule (150% Medicare fees)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Consult</td>
<td>99203</td>
<td>98.67</td>
<td>166.00</td>
</tr>
<tr>
<td>Patch Application (2nd Visit)</td>
<td>99244 (no RVU)</td>
<td>5.50 X 80 units: 440.00</td>
<td>8.00 X 80 units: 640.00</td>
</tr>
<tr>
<td>Patch Removal (3rd Visit)</td>
<td>99212</td>
<td>44.98</td>
<td>83.00</td>
</tr>
<tr>
<td>Patch Read/Counseling (4th Visit)</td>
<td>99214- Office Visit</td>
<td>106.47</td>
<td>191.00</td>
</tr>
<tr>
<td>Total average reimbursement</td>
<td></td>
<td>690.12</td>
<td>1080.00</td>
</tr>
</tbody>
</table>

Variables per state...per insurance....

- Medicare reimbursement rates for PT per unit of 95044: $4-$8
- Private insurance rates for PT per unit range from around $5-$12
- Medicare PT reimbursement by county for the US for 2018
  - The mean reimbursement across all counties is $5.37
- Limits to the number of tests that can be done in a year and what insurance limits them?
  - 80 allergens per day. Medicare does not limit the amount per year, only per day.
  - There are plans that do limit per year, depending on the employer contract with the insurance company.

Estimated Practice Cost

- T.R.U.E. ™ Test: 1 box is $698 (5 tests)
  - Cost: $140/set of 36 allergens
  - Reimbursement: 36 allergens/patient X $5.37/test = $193.32
- NACD panel $2,871.00
  - Each syringe can do ~100 tests, cost at $28.71 per patient/test.
  - 80 allergens/patient
  - Reimbursement about $5.37/test ~$429.60
  - If you PT 7 patients (80 tests each), reimbursement ~ $3007.20
- Add Finn chamber, tape, patch map, nursing time etc.)
Common Denial Overview

• Missing information - Leaving just one required field blank on a claim form can trigger a denial. Demographic and technical errors, which could be an incorrect diagnosis code, incorrect modifier or number of units, incorrect insurance ID, prompt 61% of initial medical billing denials and account for 42% of denial write-offs.

• Duplicate claim or service - Dupicates, which are claims submitted for a single encounter on the same date by the same provider for the same beneficiary for the same service item, are among the biggest reasons for Medicare Part B claim denials (up to 32%).

• If you ever encounter a plan that does not cover patch testing, please let CDI and ACDS know.

Useful Resources

American Contact Dermatitis Society (www.contactderm.org)
  • requires membership

Contact Dermatitis Institute (www.contactdermatitisinstitute.com/mypatchlink.php)
  • Patient handouts, webinars
  • List of products to avoid

NIH (http://householdproducts.nlm.nih.gov/)

https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PFSlookup/


https://www.changehealthcare.com/blog/medical-billing-denials-avoidable