Patch Test Workshop

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Disclosures

Nothing to Disclose
Objectives

• To identify dermatitis patients who may have Allergic Contact Dermatitis
• Creating a reasonable panel for patch testing
• To gain hands on experience with preparing and applying patch tests
• How to perform, interpret and follow up on patch tests
Presentation of Allergic Contact Dermatitis

• Spongiosis – edema of the intercellular epidermal cells
• Vesicles – can be small, coalesce or large
• Erosions, excoriation, bleeding from scratching
• Lichenification if chronic
• “there is no distinct dermatopathologic feature that is diagnostic of either ICD or ACD”

# Differential Diagnosis

## Table 2. Major Conditions That May Be Investigated in the Differential Diagnosis of Contact Dermatitis

<table>
<thead>
<tr>
<th>Primary skin diseases</th>
<th>Systemic diseases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atopic dermatitis</td>
<td>Wiskott-Aldrich syndrome</td>
</tr>
<tr>
<td>Lichen simplex dermatitis;</td>
<td>X-linked agammaglobulinemia</td>
</tr>
<tr>
<td>Neurodermatitis; prurigo nodularis</td>
<td>Phenylketonuria</td>
</tr>
<tr>
<td>Nummular dermatitis</td>
<td>Acrodermatitis enteropathica</td>
</tr>
<tr>
<td>Dyshidrotic dermatitis</td>
<td>Hurler syndrome</td>
</tr>
<tr>
<td>Seborrheic dermatitis</td>
<td>Chronic granulomatous disease</td>
</tr>
<tr>
<td>Psoriasis</td>
<td>Hyper-IgE syndrome</td>
</tr>
<tr>
<td>Dermatophytosis</td>
<td>Drug reactions</td>
</tr>
<tr>
<td>Polymorphous light eruption</td>
<td>Dermatophytid ID reaction</td>
</tr>
<tr>
<td>Impetigo</td>
<td>Connective tissue diseases</td>
</tr>
<tr>
<td>Acne rosacea</td>
<td>(lupus erythematosus, dermatomyositis)</td>
</tr>
<tr>
<td>Factitial dermatitis</td>
<td>Porphyria cutanea tarda</td>
</tr>
<tr>
<td>Intertrigo</td>
<td>Mycosis fungoides</td>
</tr>
<tr>
<td>Erythrasma</td>
<td></td>
</tr>
<tr>
<td>Lichen planus</td>
<td></td>
</tr>
<tr>
<td>Scabies</td>
<td></td>
</tr>
<tr>
<td>Pyoderma gangrenosum</td>
<td></td>
</tr>
</tbody>
</table>
Location Matters

• Eyelids
  – Locally applied cosmetics (hair and face)
  – Agents transferred from the hands (look for dermatitis in between the fingers and around genitals on males)
  – Artificial nails
  – Metals (nickel & gold)
Location Matters

• Face
  – Similar to eyelids – cosmetics most common
  – Rubber products and latex are possible (balloons)
  – Makeup of significant other
Location Matters

• Chelitis
  – Products applied to lips (flavored lip balms)
  – Toothpaste
  – Balsam of Peru
  – Fragrances
  – Dental material
  – Musical instruments/metal
Location Matters

• Hands
  – Irritant contact dermatitis very likely
  – “Wet” occupations (hairdressers, food service, cleaning professions, healthcare)
  – Hand sanitizers
  – Metals
Location Matters

• Axilla
  – Topically applied products will be throughout the axilla
  – Products in clothing will spare the apex of the axilla
  – Sweat leaching in places like axilla from clothing
  – Aluminum hydroxide is common cause of ICD, but rarely causes ACD
Location Matters

• Legs
  – Topical drug reactions frequent in patients with stasis dermatitis
  – Frequent causes are topical antibiotics and corticosteroids
  – Include insects in your differential
  – Plant-life
Location Matters

- Anogenital Region
  - Consider pruritus ani (poor hygiene)
  - Sexual devices (latex)
  - Seminal fluid allergy
  - Topical medications/suppositories
  - Scented/moisturized toilet paper/wipes
  - Ammonia in urine can be irritant with incontinent individuals
  - Ingestion of spices, antibiotics or laxatives can aggravate anal pruritus
Location Matters

- Sun Exposed Skin
  - Consider polymorphous light eruption
  - Consider photo-phytodermatitis
  - Consider cutaneous lupus
  - Consider photosensitive drug eruptions
  - Sunscreens, bug repellents
  - Consider dermatomyositis
Patch Test Panels – True Test

<table>
<thead>
<tr>
<th>Panel 1.2</th>
<th>Panel 2.2</th>
<th>Panel 3.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Caine mix</td>
<td>17. CI+Me- Isothiazolinone</td>
<td>29. Imidazolidinyl Urea</td>
</tr>
<tr>
<td>8. Paraben mix</td>
<td>20. p-Phenylenediamine</td>
<td>32. Mercaptobenzothiazole</td>
</tr>
<tr>
<td>10. Balsam of Peru</td>
<td>22. Mercapto mix</td>
<td>34. Parthenolide</td>
</tr>
<tr>
<td>11. Ethylenediamine dihydrochloride</td>
<td></td>
<td>35. Disperse Blue 106</td>
</tr>
<tr>
<td>12. Cobalt dichloride</td>
<td>24. Thiuram mix</td>
<td>36. 2-Bromo-2-nitropropane-1,3-diol</td>
</tr>
</tbody>
</table>

Estimated to fully evaluate 25-30% of all US patients with ACD
Patch Test Panels – Dormer Labs

Bakery Series
Cosmetic Series
Cutaneous Adverse Drug Reaction Series
Corticosteroid Series
Dental Materials Patients
Dental Materials Staff
Dental Screening
Epoxy Series
Fragrance Series
Hairdressing Series
Isocyanate Series
Leg Ulcer Series
(Meth) Acrylate Series Adhesives, Dental & Other
Medicament Series
Metal Series
(Meth) Acrylate Series Nails-Artificial
(Meth) Acrylate Series Printing

North American Baseline Series
North American 80 Comprehensive Series
North American 65 Extended Series
North American Photopatch Series
Oil & Cooling Fluid Series
Photographic Chemicals Series
Plastics & Glues Series
Plant Series
Rubber Additives Series
European Baseline Series
Supplemental Allergens
Shoe Series
Scandinavian Photo Patch
Sunscreen Series
Textile Colours & Finish
Various Allergens
Most Common Allergens

- Nickel
- Balsam of Peru
- Neomycin
- Cobalt
- Fragrance Mix
- Potassium Dichromate
- Bacitracin
- Thimerosal
- Formaldehyde
- Glutaraldehyde

INSTRUCTION SHEET FOR PATIENTS
PATCH TESTING

What is Patch Testing?
Patch testing helps to confirm a diagnosis of an allergic contact dermatitis, which is a type of skin rash that occurs when certain substances come in contact with the skin. Examples of these substances, known as allergens, may include fragrance in perfume, adhesives used in bandages, metals found in jewelry, and glues used in shoes, just to name a few.

Anyone can develop skin irritation (also called an irritant contact dermatitis) when exposed to harsh chemicals like strong detergents, household cleansers, solvents, and acids. However, reactions to allergens are different. Only some people will develop an allergic contact dermatitis when exposed to allergens.

That’s why you may be the only person you know that experiences a rash when coming in contact with a particular allergen. Allergic contact dermatitis can only occur after the immune system cells in the skin learn to recognize the allergen and become activated to cause inflammation. In some cases it may take just a few exposures to the allergen for this sensitization to occur. In other cases, sensitization occurs only after years of repeated exposure, which explains why a new allergy can develop to a product that you have used for months or years without any previous difficulty.

A patch test is not the same as a scratch or prick test (often performed by an allergist). Patch testing cannot identify allergies to foods, inhaled substances, or oral medications.

How is Patch Testing Performed?
Strips of tape containing small quantities of common allergens will be applied to the skin of your back during your first visit, which may last about 45 minutes. The allergens must remain in place and be kept dry for 48 hours.

After the 48 hours, the patches will be removed and an initial reading will be performed. The patch sites will be outlined with a marker, and you will be asked to return for a final reading on another day.

A positive test will show a red, raised area of skin, often with itching. A strong reaction could cause blistering and, very rarely, a prolonged reaction (lasting several weeks) or scarring.

How Can I Increase the Reliability of the Test?
1. Keep the skin of your back dry until the patches are removed 48 hours after applied. Until then, no showering, bathing (except for sponge baths), or swimming.
2. Avoid any activity that may cause you to sweat heavily (examples: exercising, shoveling). Excessive perspiration could cause the patches to fall off.
3. If any of the patches begins to peel loose, reinforce it with adhesive tape.
4. Do not remove the magic marker marks until instructed to do so. Some of the ink sometimes does come off on clothing, so it may be a good idea to wear a dark undershirt.
When Should They Be Read?

- Patches should be kept in place for 48 hours
- 48 hour reading should be read after erythema from removal of tape has subsided
- 30% of relevant allergens negative at 48 hours will be positive at 96 hours.
- Monday application, Wednesday removal and Friday reading works well
- Some irritant reactions positive at 48 hours were negative by 96 hours.
- 7 day readings are recommended by some
## PATCH TESTING: PATIENT TEST RESULTS

### NA-1000 North American Baseline Series

<table>
<thead>
<tr>
<th>#</th>
<th>Article#</th>
<th>Description</th>
<th>Readings</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>B-004</td>
<td>Benzocaine 5.0 pet</td>
<td>#1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>M-003B</td>
<td>2-Mercaptobenzothiazole (MBT) 1.0 pet</td>
<td>#2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>C-020</td>
<td>Colophonium / (Colophony) 20.0 pet</td>
<td>#3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>P-006</td>
<td>4-Phenylenediamine base 1.0 pet</td>
<td>#4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I-001A</td>
<td>Imidazolidinyl urea (Germall 115) 2.0 pet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>C-014</td>
<td>Cinnamal / (Cinnamic aldehyde) 1.0 pet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>A-004</td>
<td>Amerchol L 101 50.0 pet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>MX-06</td>
<td>Carba mix 3.0 pet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>N-001</td>
<td>Neomycin sulfate 20.0 pet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>MX-01</td>
<td>Thiuram mix 1.0 pet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>F-002A</td>
<td>Formaldehyde 1.0 aq</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>E-005</td>
<td>Ethylenediamine dihydrochloride 1.0 pet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>E-002</td>
<td>Epoxy resin, Bisphenol A 1.0 pet</td>
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<td></td>
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<tr>
<td>14</td>
<td>C-007B</td>
<td>Quaternium-15 (Dowcill 200) / (1-(3-Chlorallyl)-3,5,7-tri az-a-azasadamantane chloride) 2.0 pet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>B-024</td>
<td>4-tert-Butylphenolformaldehyde resin 1.0 pet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>MX-05B</td>
<td>Mecapto mix 1.0 pet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>I-004</td>
<td>N-isopropyl-N-phenyl-4-phenylenediamine 0.1 pet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>P-014B</td>
<td>Potassium dichromate 0.25 pet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>B-001</td>
<td>Myroxylon pereirae resin / (Balsam Peru) 25.0 pet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>N-002B</td>
<td>Nickel sulfate hexahydrate 2.5 pet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>D-044C</td>
<td>Diazolidinylurea (Germall II) 1.0 pet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>D-047B</td>
<td>DMDM Hydantoin 1.0 pet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>B-032B</td>
<td>Bacitracin 20.0 pet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>MX-24</td>
<td>Mixed diallyl thiourea 1.0 pet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>C-009A</td>
<td>Methylthiosalazoline + Methylchloroisothiazoline (Cl-Me-isothiazoline [Kathon CG 100ppm]) 0.01 aq</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>MX-03A</td>
<td>Pabem Mix 12.0 pet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>D-049E</td>
<td>Methylenebromoglutaminil (MDBGN) 0.5 pet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>MX-07</td>
<td>Fragrance mix 8.0 pet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>G-003B</td>
<td>Glutaraldehye 0.5 pet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>B-015B</td>
<td>2-Butyl-2-nitropropane-1,3-diol (Bronopol) 0.5 pet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>MX-18</td>
<td>Sesquiterpene lactone mix 0.1 pet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>MX-25</td>
<td>Fragrance Mix II 14.0 pet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>P-019B</td>
<td>Prolipine glycol 30.0 aq</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>H-014C</td>
<td>Benzophenone-3 / (2-Hydroxy-4-methoxybenzophenone) 10.0 pet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
What is a Positive Test?

• History and exam need to correlate with your test results

• Consider appropriate controls on healthy subjects for atypical patch tests
### Interpretation of Results

APPENDIX

Descriptive Interpretation Scale Recommended by the International Contact Dermatitis Research Group, Visual Key, Instruction Sheet for Patients, and Standard Patch Test Record Form

<table>
<thead>
<tr>
<th>No.</th>
<th>Grade</th>
<th>Meaning/appearance</th>
<th>Clinical relevance*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>—</td>
<td>Negative reaction</td>
<td>Excludes ACD. If ACD is still suspected, recheck technique or do ROAT.</td>
</tr>
<tr>
<td>2</td>
<td>R</td>
<td>Irritant reaction</td>
<td>Controls show similar response or there was an excited skin response.</td>
</tr>
<tr>
<td>3</td>
<td>± + or ?</td>
<td>Doubtful reaction</td>
<td>Negative test result. Repeat readings at 3, 4, and 7 days after patch removed. If ACD still suspected, recheck technique or do ROAT.</td>
</tr>
<tr>
<td>4</td>
<td>1+</td>
<td>Light erythema, nonvesicular</td>
<td>Equivocal test result. Could either be negative or indicative of waning prior sensitization. False-positive test result or excited skin syndrome must be ruled out by test in control subject. Repeat steps in 3.</td>
</tr>
<tr>
<td>5</td>
<td>2+</td>
<td>Edema, erythema, discrete vesicles</td>
<td>Positive test result. Indicative of prior or current sensitization. Should correlate with history and physical findings. False-positive test result or excited skin syndrome must be ruled out by test in control subject</td>
</tr>
<tr>
<td>6</td>
<td>3+</td>
<td>Coalescing vesiculobulbous papules</td>
<td>Strongly positive result. Same conditions in 5 apply.</td>
</tr>
</tbody>
</table>

Abbreviations: ACD, allergic contact dermatitis; ROAT, repeat open application test.

* Clinical relevance is based on the Joint Task Force's appraisal of current literature.
Interpretation of Results

Weak Positive Reaction
- erythema
- infiltration
- possibly papules

Strong Positive Reaction
- erythema
- infiltration
- vesicles

Extreme Positive Reaction
- intense erythema
- intense infiltration
- coalescing vesicles

Doubtful Reaction
- faint erythema
- no infiltration

Irritant Reaction
- discrete patchy erythema
- no infiltration
Large Reactions are Possible

Nickel at 48 hours
Large Reactions are Possible

Nickel at 96 hours

For comparison - This is before we put on the tests.
48 Hours
96 Hours
96 Hours
Patient Education is Critical

- The patient should be provided with relevant handouts that a lay-person can interpret
- There are many on-line resources for contact allergen handouts
2 Wool Alcohols (Lanolin) – Patient Information

Your T.R.U.E. TEST® results indicate that you have a contact allergy to wool alcohols, also known as lanolin. This contact allergy may cause your skin to react when it is exposed to this substance, although it may take several days for the symptoms to appear. Typical symptoms include redness, swelling, itching and fluid-filled blisters.

Wool alcohols are a natural product obtained from the fleece of sheep and are commonly used in cosmetics, toiletries and medicines.

Where are wool alcohols (or lanolin) found?

At work, you may find wool alcohols (or lanolin) in:
- Manufacture and use of personal care products such as hand lotions and cosmetics.
- Manufacture and use of pet care or veterinary products.
- Metalworking fluids including lubricants, cutting fluids and corrosion inhibitors.
- Polishes and waxes.
- Printing inks.
- Impregnating agents for textile, leather goods and furs.
- Insulation for wiring.

At home, you may find wool alcohols (or lanolin):
- Cosmetics such as foundations, powders, blush, mascaras, eye shadows, eyeliners, eye pencil.
- Skin care products such as balms, creams, ointments, lotions and moisturizers.
- Personal hygiene items such as soaps, cleansers and shampoos.
- Lipsticks and lip balms.
- Facial masks.
- Sunscreens.
- Over-the-counter and prescription treatments for skin rashes or dermatitis.
- Pet shampoos, conditioners and grooming aids.
- Hair removers and shaving products.
- Nail enamel remover.
- Baby oil.
- Diaper lotion.
- Hair spray.
- Hemorrhoid preparation.
- Household polishes and waxes.
- Shoe polishes.

What should you look for and avoid?*

Avoid products that list any of the following names in the ingredients, MSDS or package insert.
- Wool alcohols (lanolin) or anhydrous lanolin; wool fat or grease; wool wax; wool grease fatty acid; wool fats and glyceric oils; fats, lanolin; Adeps lanae; Degas.

What are some products that may contain lanolin or wool alcohols? *
- Old Spice® Moisturizing Shave Cream.
- Burt’s Bees® Beeswax Lip Balm.
- Desitin® Diaper Rash Ointment.
- Eurax® Original Moisturizing Lotion.
- Revlon® Cuticle Massage Cream.
- Maybelline® Great Lash Washable Mascara.
- Nair® 4 Minute Lotion Hair Remover with Aloe & Lanolin.
- Vermont’s Original Bag Balm®.
- Browshaper & Eyeliner By Cover Girl®
- Max Factor® Pan-Cake Makeup.
- Simple Green® Hand Gel.
- Lubriderm® Daily Moisture Lotion.
- Bio-Groom® Conditioning Shampoo (pets).
- Maybelline® Wet Shine Diamonds Lipstick.

What products do NOT contain lanolin or wool alcohols? *
- Almay® The Insider Mascara.
- U-Lactin® Therapeutic Body Lotion.
- Cetaphil® Moisturizing Cream.
- Burt’s Bees® Natural Cosmetics Two in One Eyeliner & Eyebrow Pencil.
- Veet® Mousse Hair Remover.
- Neutrogena® MoistureShine Tinted Lip Balm.
- Nivea® for Men.
- Lubrex® Hand Cream.
- L’Oreal® Air Wear Powder Foundation.
- Nivea® for Men After Shave and Shaving Gel.
- Almay® Clear Complexion Pressed Powder.

*For additional information about products that might contain wool alcohol or lanolin, or a related substance, go to the Household Product Database online (http://hap.bhs.od.nih.gov) at the United States National Library of Medicine. These lists are brief and provide just a few examples. They are not comprehensive. Product formulations also change frequently. Read product labels carefully and talk to your doctor if you have questions. These are general guidelines. Talk to your doctor for more specific instructions.

For further information about contact allergies and patch testing, visit www.truetest.com.
PATIENT INFORMATION SHEET

Amerchol L 101

Your patch testing results indicate that you have a contact allergy to Amerchol L 101. It is important that you familiarize yourself with this chemical and take steps to avoid coming in contact with it.

What is Amerchol L 101 and where is it found?
Amerchol is an emollient and an emulsifier used in medicated ointments, furniture polish, waxes, textiles and inks. It can also be found in hair products, lipsticks, moisturizers, furs, cutting oils, leather and paper. Further research may identify additional product or industrial usages of this chemical.

What else is Amerchol L 101 called?
This chemical can be identified by different names, including:
Amerchol L101
Lanolin alcohol
Wool alcohol

This may not be a complete list as manufacturers introduce and delete chemicals from their product lines.

THINGS YOU CAN DO TO HELP MANAGE YOUR CONTACT ALLERGY

- Be vigilant ... read the product label. Always take the time to read the ingredient listing on product packages. This should be your first step each time you purchase a product as manufacturers sometimes change product ingredients. If you have any concerns ask your pharmacist or your doctor.
- Test the product first. If you have purchased a new product you should test it on a small skin area to see if you get a reaction before using the product on larger skin areas.
- Advise people you obtain service from of your contact allergy. This should include people like your pharmacist, doctor, hairdresser, florist, veterinarian, etc.
- Inform your employer if the source of your contact allergy is work related. You should identify the specific source of the chemical and take the necessary steps to avoid further exposure. Protective wear may be adequate or you may need to make a change in your work activities. Both you and your employer benefit when the cause of your occupational dermatitis is eliminated.
- "Google" it. The internet is an excellent source of ingredient information that can be searched by product, by company and by specific chemicals. Some helpful independent internet links include:
  - www.nlm.nih.gov/pubmed/medline.html (U.S. Dept. of Health and Human Services; subject list)
  - www.cosmeticsinfo.org (Cosmetic Industry Category Ingredient Database)
  - www.chemcautions.com (Information on all S.C. Johnson product ingredients)

If you have any future contact dermatitis concerns or questions, please call the doctor's office.
Allergy to wool alcohols

What are wool alcohols?

Wool alcohols are the principle component of lanolin in which allergens are found. Lanolin is a natural product obtained from the fleece of sheep. Sebum is extracted from the wool, cleaned and refined to produce anhydrous lanolin. This comprises 3 parts, wool alcohols, fatty alcohols and fatty acids. Currently the wool alcohols are considered the main sensitisers in lanolin but whether they are the sole sensitisers, needs further investigation. Nowadays there is also chemically modified lanolin that may be less sensitising than natural lanolin.

Wool alcohols, wool fat, anhydrous lanolin, lanolin alcohol, wool wax and wool grease are just some of the terms used interchangeably with lanolin. In this article we will use wool alcohols, as it is this fraction of lanolin that is the main cause of contact allergies.

What products contain wool alcohols?

Lanolin is a good emulsifier; this means it binds well with water thus it is particularly useful in the manufacture of pharmaceutical and cosmetic formulations. Wool alcohols are found in many pharmaceutical preparations, cosmetics and toiletries. They also have some industrial uses.

<table>
<thead>
<tr>
<th>Pharmaceuticals</th>
<th>Cosmetics/toiletries</th>
<th>Industrial</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Steroid-containing creams/ointments</td>
<td>- Hand creams</td>
<td>- Printing ink</td>
</tr>
<tr>
<td>- Haemorrhoidal preparations</td>
<td>- Moisturizers</td>
<td>- Furniture and shoe polishers</td>
</tr>
<tr>
<td>- Medicated shampoos</td>
<td>- Protective creams</td>
<td>- Textile finishers</td>
</tr>
<tr>
<td>- Veterinary products</td>
<td>- Self-tanners</td>
<td>- Lubricants, cutting fluids</td>
</tr>
<tr>
<td>- Liniments</td>
<td>- Sunscreens</td>
<td>- Paper</td>
</tr>
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<td></td>
<td>- Glossy lipsticks</td>
<td>- Leather</td>
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</tbody>
</table>
What are the reactions of allergy to wool alcohols?

Typical allergic contact dermatitis reactions may occur in individuals allergic to wool alcohols. The rash is characteristically located on the face, hands and arms. There may be intense swelling and redness of the affected area within a few hours or the rash may appear after a day or two of the product being used.

Am I allergic to wool alcohols?

Patch testing using 30% wool alcohol in petrolatum is what is routinely used to test for sensitivity to wool alcohols. Although wool alcohols are the main sensitizers in lanolin they may not always be the cause of the sensitivity and patch testing with natural lanolin from several sources is also recommended.

The development of chemically modified lanolin may help to reduce the incidence of skin reactions to natural lanolin. However, there have been cases where patients have shown marked sensitivity to modified lanolin, yet not to natural lanolin. Dermatitis caused by modified lanolin may be missed if patch testing is confined to testing with wool alcohols and natural lanolin only.

Since lanolin is a natural product, its constituents vary depending on its source. Therefore an individual may be allergic to some lanolin-containing products but not to others. Self-testing a product for allergy to lanolin-containing products is possible but should be done only after first talking with your doctor. This should be done only with products that are designed to stay on the skin such as cosmetics and lotions. Apply a small amount (50 cent sized area) of the product to a small tender area of skin such as the bend of your arm or neck daily for 5 to 7 days. Examine the area each day and if no reaction occurs, it is unlikely you are allergic to it, although it may still act as an irritant. Products such as soaps, polishes and waxes should not be tested in this way.

Management of dermatitis caused by wool alcohol allergy

Once the dermatitis appears on the skin, the first thing to do is to remove the source. In most instances this would entail stopping the use of all products that contain lanolin.

Standard treatment with emollients and topical steroids must not contain lanolin.

What should I do to avoid wool alcohol allergy?

If you have wool alcohol allergy the best way to avoid any problems is by avoiding all products that contain wool alcohols. Check all product labels for the list of ingredients and do not use if they contain wool alcohols or any of the other names for wool alcohols. If you are unsure, ask your pharmacist for advice and a suitable alternative.

Alert your doctor to the fact that you have an allergy to wool alcohols. This is particularly important as some topical medications that your doctor may want to prescribe to you contain wool alcohols.

Your dermatologist may have further specific advice, particularly if you are highly sensitive to wool alcohols.

Alternative names for wool alcohol

Wool alcohol is also known by several other names. These include:

- Alpha lacto alcohol
- Adon lanol anhydrous
Alternative names for wool alcohol

Wool alcohol is also known by several other names. These include:

- Adeps lanae anhydrous
- Alcohols lanae
- Amerchol
- Anhydrous lanolin
- Lanolin
- Wool fat
- Wool grease
- Wool wax

Avoid all of these. At work, request a material safety data sheet to help identify potential sources of exposure.

Further information

Cross reactions: cetyl or stearyl alcohols (Eucerin™, Aquaphor™)

Sensitizer: Wool alcohol is the main sensitizer in lanolin

Patch Test: Wool alcohol 30% in petrolatum

Related information

Reference

- Book: Fisher's Contact Dermatitis, Ed Rietschel RL, Fowler JF. Lippincott Williams & Wilkins 2001

On DermNet NZ:

- Dermatitis
- Allergic contact dermatitis
- Patch testing

Other websites:

- T.R.U.E. Tests: contact allergy to wool alcohols
- Cardiff Contact Dermatitis Information, lanolin (wool alcohols)
- Allergic contact dermatitis - Medscape Reference
- Relevance of positive reactions to wool alcohols - EECRG

Books:

See the DermNet NZ bookstore
Wool Alcohols (Lanolin)

Your results indicate that you have a contact allergy to wool alcohol, also known as lanolin. This contact allergy may cause your skin to react when it is exposed to this substance, although it may take several days for the symptoms to appear. Typical symptoms include redness, swelling, itching and fluid-filled blisters.

You may have some questions regarding your allergy, so this information sheet will help provide answers.

What are wool alcohols?

Wool alcohols (or lanolin) are a natural product obtained from the fleece of sheep and are commonly used in cosmetics, toiletries and medicines.

Where are wool alcohols found?

At work, you may find wool alcohols in the following:

- Manufacture and use of personal care products such as hand lotions and cosmetics
- Manufacture and use of pet care or veterinary products
- Metalworking fluids including lubricants, cutting fluids and corrosion inhibitors
- Polishes and waxes, printing inks
- Impregnating agents for textile, leather goods and fur
- Insulation for wiring

At home, you may find wool alcohols in the following:

- Cosmetics such as foundations, powders, blush, mascaras, eye shadows and eyeliners
- Skin care products such as balms, creams, ointments, lotions and moisturizer
- Personal hygiene items such as soaps, cleansers and shampoos
- Lipsticks, lip balms, facial masks, sunscreens
- Over-the-counter and prescription treatments for skin rashes or dermatitis
- Pet shampoos, conditioners and grooming aids
- Hair removers and styling products
- Nail enamel removers
- Baby oil and diaper lotion
- Hair sprays
- Hemorrhoid preparations
- Household polishes and waxes

How can you avoid wool alcohols, or lanolin?

- Don't use products with wool alcohols or lanolin on your skin, hair or body. Only use products that do not list wool alcohols, lanolin, or related chemicals on the label, ingredients list or Material Safety Data Sheet (MSDS). If there is no information, talk to your pharmacist or health care provider.
- Tell your physician, pharmacist, dentist, veterinarian, baseliner and hairdresser that you are allergic to wool alcohols or lanolin. Ask for preparations that do not contain wool alcohols (lanolin) or related substances.
- If you must use or contact wool alcohols or lanolin when caring for children or pets, wear protective gloves and clothing. Utility gloves made of natural or synthetic rubber, or vinyl, are good for working with wool alcohols (or lanolin).
- If you think that you contact wool alcohols or lanolin at work, ask your employer for MSDS or manufacturer information on the products(s), and talk to your employer about using a different product or wearing protective gloves and clothing.

What should you look for and avoid in products?

- Wool alcohols
- Lanolin
- Anhydrous lanolin
- Wool fat or grease
- Wool wax
- Wool grease fatty acid
- Glyceryl oleate and tallow
- Adipic anhydride
- Degrass

The best way to treat your allergy is avoidance.

For more information on Allergic Contact Dermatitis and your allergy, visit www.mypatchlink.com
Welcome to ACDS

Founded in 1980, the mission of the American Contact Dermatitis Society (ACDS) is to promote, support, develop and stimulate information about contact dermatis and occupational skin disease for improved patient care.

Members include dermatologists, allergists, physicians, researchers, nurses and health care professionals.

The Society provides education, information and practical tools to aid physicians in their care of patients.

The society supports young leaders in the field with fellowships for research and mentoring as well as awards for presentations at the society’s annual meeting. International exchange is encouraged with travel and research awards.

Photos from the 24th Annual Meeting of the ACDS in Miami

New! Learn about the ACDS Contact Allergen Management Program (CAMP)

ACDS News

- CAMP UPDATE OVERVIEW
- Requests for Proposals
  Outcomes of Contact Dermatitis
- Clinical Research Application
  Due April 15
- Membership Application
  Due April 15
- "Find a Physician" for Patch Testing
- Resident Programs: Request an ACDS speaker

American Contact Dermatitis Society
2252 North Rock Road E PO. Box 108, Exeter, PA 18644 USA
(866) 437-4437 Fax (866) 437-4427
info@contactderm.org

Web services provided by lda
Follow Up

- Give the patients time to digest the information and go on the hunt at home and work.
- Once they have likely identified and eliminated relevant products, then consider treating with systemic steroids to knock down all remaining dermatitis.
- Follow up and re-evaluate several weeks later – be prepared for lots of questions.
Conclusion

• A reasonable suspicion for allergic contact dermatitis should exist before choosing to patch test

• Patch test panels should reflect relevant allergens for your patient’s presentation

• Patch tests must be interpreted by someone with experience who is familiar with the technique
Hands on Practice
Time