Prevention of occupational contact dermatitis in hairdressers

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Hairdressers

Register of occupational skin disease

Occupational eczema frequent
- Induction period: 2 years
- Median age: 19 years

- Often affects apprentices

Uter W et al. Contact dermatitis 1999;
Bregnhøj A et al. 2011

Diepgen TL, Coenraads. Int Arch Occup Environ Health 1999;
Hairdressers – register-based study

N=7840 Danish graduates from vocational schools 1985 -2007

Hand eczema:
One-year prevalence of hand eczema: 50.4%
Point prevalence: 17.1%

The onset-age for hand eczema:
15 and 24 years for 75% of all respondents with hand eczema.

Lysdal SH et al. Contact Dermatitis: 2011
Cohort: 2352 apprentices
Followed for 3 years by 3 examinations

Prevalence of Skin changes on hands
1. 35.4%  2. 47.5%  3. 55.1%

Hand eczema
1. 12.9%  2. 23.5%  3. 23.9%
Wet work: risk factor for hand eczema

Unprotected wet work for more than 2 h per day a major risk factor for hand eczema.

67.9 % of hairdressing apprentices have more than 2 h wet work á day.


ORIGINAL ARTICLE
Prevention of hand eczema among Danish hairdressing apprentices: an intervention study
Anne Bregnbay,1 Torkil Menné,2 Jeanne Duus Johansen,3 Heidi Sastedt4
Skin health and safety at work in Croatian hairdressing apprentices

Tea Samardžić¹, Veda Marija Varna³, Marija Bakotić², Željka Babić², Richard Brans³, Selma Cvijetić Avdagić², Darinka Štampar Šmagur⁴, Iva Kovačević⁴ and Jelena Macan²
Usage of gloves for hair shampooing in German hairdressing salons

Madeleine Dulon¹*, Björn Kähler¹, Sandra Kirvel², Günter Schlanstedt³ and Albert Nienhaus³

<table>
<thead>
<tr>
<th>Survey</th>
<th>Data collection</th>
<th>Observation of shampoos</th>
<th>Telephone interview of salon owners</th>
<th>Comparison of proportion for glove use for hair shampooing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Number of salons</td>
<td>Glove Usage</td>
<td>Number of salon owners</td>
</tr>
<tr>
<td>1</td>
<td>August 2009</td>
<td>172</td>
<td>18</td>
<td>10.5</td>
</tr>
<tr>
<td>2</td>
<td>August 2010</td>
<td>69</td>
<td>9</td>
<td>13.0</td>
</tr>
<tr>
<td>3</td>
<td>August 2011</td>
<td>75</td>
<td>12</td>
<td>16.0</td>
</tr>
<tr>
<td>4</td>
<td>August 2012</td>
<td>119</td>
<td>22</td>
<td>18.5</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>435</td>
<td>61</td>
<td>14.0</td>
</tr>
</tbody>
</table>

*Relative to number of salons (observed/interviewed)

¹Relative to number of salons using gloves generally
## Contact allergies in hairdressers

399 hairdressers and 1995 matched controls

<table>
<thead>
<tr>
<th>Substance</th>
<th>Hairdressers</th>
<th>Controls</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>p-Phenylenediamine</td>
<td>9.0%</td>
<td>1.2%</td>
<td>9.8</td>
<td>(5.6-17.2)</td>
</tr>
<tr>
<td>Thiuram mix</td>
<td>2.5%</td>
<td>1.2%</td>
<td>2.1</td>
<td>(1.0-4.4)</td>
</tr>
<tr>
<td>Ammonium persulphate</td>
<td>10.8%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toluene diamine</td>
<td>4.5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glycerylmonothioglycolate</td>
<td>1.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Schwensen J et al. Contact Dermatitis 2013
Sensitization to Rubber Accelerators in Northeastern Italy: The Triveneto Patch Test Database

Silvia Buttazzo, MD,* Andrea Prodi, MD,* Anna Belloni Fortina, MD,† Maria Teresa Corradin, MD,‡ and Francesca Larese Filon, MD*

Thiurams: hairdressers (OR, 3.6; 95% CI, 1.8–7.1).

Recommendation: Accelerator free nitrile gloves
Improper glove use

• Wrong use of gloves


• Danish cohort of hairdressers
  • 20.2 % re-used gloves
    • 67.2 % only took a new pair, when old were torn
    • 41.1% turned their gloves inside out and reused them
Leaving the trade

Register-based study on all graduates from hairdressing vocational schools 1985 – 2007 (n=7 840)
Questionnaire (answers obtained from 5 239)

• 44.3% had stopped in profession
  • because of musculo-skeletal pain (41.9%)
  • because of hand eczema (23.1%)
  • related to chronicity and severity

*Lysdal SH et al. Contact Dermatitis: 2011*
Preventive strategies in apprentices

Box 1 Special skin protection program for hairdressers

<table>
<thead>
<tr>
<th>Action</th>
<th>Intervention</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wash, dye, bleach, and perm</td>
<td>10%</td>
<td>24%</td>
</tr>
<tr>
<td>Cut before you dye the hair</td>
<td>25%</td>
<td>26%</td>
</tr>
<tr>
<td>Mix in a separate, ventilated cabinet</td>
<td>27%</td>
<td></td>
</tr>
<tr>
<td>Disposable gloves must be clean, new, and dry</td>
<td>28%</td>
<td></td>
</tr>
<tr>
<td>Never reuse disposable gloves</td>
<td>28%</td>
<td></td>
</tr>
<tr>
<td>Use cotton gloves underneath protective gloves</td>
<td>29%</td>
<td></td>
</tr>
<tr>
<td>Use gloves for as long as necessary, but as shortly as possible</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td>Use an unscented, lipid rich moisturizer</td>
<td>31-33%</td>
<td></td>
</tr>
<tr>
<td>Do not wear rings when you work</td>
<td>34%</td>
<td></td>
</tr>
<tr>
<td>Use gloves when doing wet work in your spare time</td>
<td>35%</td>
<td></td>
</tr>
<tr>
<td>Use warm gloves outside when it’s cold</td>
<td>36%</td>
<td></td>
</tr>
</tbody>
</table>

Hand eczema

<table>
<thead>
<tr>
<th>Time</th>
<th>Intervention</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>T0</td>
<td>8%</td>
<td>8%</td>
</tr>
<tr>
<td>T1½</td>
<td>19%</td>
<td>28%</td>
</tr>
</tbody>
</table>

Recommend: nitrile gloves, accelerator free

Antelmi A et al
How to remove gloves

43 hairdressers and apprentices

First round: all (100%) had contamination of skin
Range between 0.02 and 101.37 cm²

10 mins demonstration in glove removal

Second round: 55.8% had contamination of skin
Range between 0.00 and 3.08 cm²
Mild to moderate hand eczema

2 day seminar with:
- dermatological examination
- skin protection education

Result:
Major reduction in:
- Premium for employer
- Expenses for rehabilitation and compensation
Multicentre cohort study ‘Rehabilitation of Occupational Skin Diseases – Optimization and Quality Assurance of Inpatient Management (ROQ)’: results from a 3-year follow-up

Richard Brans1,2, Christoph Skudlik1,2, Elke Weisshaar3, Reginald Scheidt3, Robert Ofenloch3, Peter Elsner4,5, Britta Wulfhorst1,2, Michael Schönfeld6, Swen M. John1,2,7 and Thomas L. Diepgen3,4 for the ROQ Study Group5

Remaining in original profession

moderate to severe hand eczema

Reduced severity of Hand eczema
Mod/severe: T0: 78.4% T3y: 23.1%

Quality of Life improved
DLQI T0: 10 T3y: 5

Absence from work reduced
Sick days T0: 23.2 T3y: 7.4
Allergen substitution

Acid permanent waving
Solutions:
Technical rule 540
set in force 1997

Glyceryl monothioglycolate (GMTG)
Replaced by ammonium thioglycolate

Trends in patch test reactions to GMTG

Uter W 2014
GMTG: 4.7% positive
The re-emergence of GMTG as an occupational allergen should be considered as a warning signal ('sentinel event')
Conclusions

• High incidence and prevalence of hand eczema
• Starts in the majority of cases as apprentices
• Causative factors: allergens and wet work
• Causes hairdressers to leave the profession
• Preventive strategies work
  • Broader implementation in Europe
  • Include employers
  • Regulations should be improved concerning ingredients
European framework agreement on the protection of occupational health and safety in the hairdressing sector

Agreement finally signed! Thursday 23 June 2016