Prof S. M. John, MD, Univ. Osnabrueck

For improved prevention of occupational skin diseases in Europe

Prof. Dr. Swen Malte John, MD
Chair "EADV Taskforce on Occupational Skin Diseases" and "EU COST Action StanDerm"
sjohndeu

New occupational dermatologic problems

Most Frequent Occupational Diseases: Skin

Irritatives Kontaktekzem
“Skin diseases of occupational origin outnumber all other work-incurred illnesses in the US.” (National Institute for Occupational Safety and Health [NIOSH], Cincinnati, Ohio, USA; www.cdc.gov/niosh).

“Skin diseases are one of the most important emerging risks related to exposure to ... chemicals.” (EU-25 report 2008, European Agency for Safety and Health at Work [EU-OSHA], Bilbao).

Annual loss of productivity by OSD:
- Netherlands: 99.1 million € (van Gils, Boot et al. 2011)
- Germany: > 1.5 billion € (Batzdorfer, Schwantitz 2005)
- Denmark: 900 million DKK (J. Duus-Johansen 2011)
- UK: > 200 million £ (English 2004)
- EU: >> 5 billion € (Wulfhorst et al. 2011)
- US: > 11 billion $ (Blanciforti 2010)

OSD1-3:
- Point prevalence: ca. 20 % in risk professions, e.g. hairdressers, health care, metal etc.
- 15% of all occupational diseases in USA, up to 35 % in Europe, particularly in SME
- 30-72 % of OSD-sufferers lose job

Modular approach to systematic OSD Prevention:

- **Tertiary**
  - Individual Prevention (TIP)
  - (6 weeks in-pt. R.)
  - Dermatologist’s procedure (out-pt. treatment by local dermatologist for 6 months)
  - Health education / Skin protection seminars

- **Secondary**
  - (initial/moderate cases)

- **Primary**
  - (severe cases)

**European Social Partners’ Framework Agreement on the Protection of Occupational Health and Safety in the Hairdressing Sector**

& Declaration of Dresden

**Health education**

Healthy skin & work campaign

Effects of preventive efforts, including workers’ education

**Hairdressers in Northern Bavaria**

> 60% reduction of incidence

**Accident Insurance’s Costs**

Source: Accident Insurance for the Health and Welfare Services (BGW), Hamburg 2013
• Modular **SafeHair Skin & Beauty Toolbox**
• Easy access multilingual web platform
  (English, German, French, Danish, Dutch, Slovenian, Maltese)
• Multiplier model (educational authorities, teachers, tutors, masters)
• **Medical reference document**
• Didactical information at all levels
• Educational games e.g. puzzle, quiz…
• Learning certificate

www.safehair.eu
1) Practice example "critical customer!"
Sara works as a hairdresser may now shampoo a new customer. She accompanies the customer to the sink and puts on her gloves. Suddenly the female customer says: "Why are you wearing gloves? Because you don't want to touch me? My hair is not that dirty and besides, gloves pull on my hair!"

How can you react in this situation?

BRIEF COUNTERARGUMENT
"I'm sorry you have that impression. I'm not wearing gloves because of you, but rather for myself, because I have to protect my skin from so much contact with moisture. Hairdressers often suffer from contact dermatitis of the skin. "Besides, we use single-use gloves that don't pull on the hair. We'll try it out and you let me know if it is uncomfortable."
Title: SafeHair2016 - Common Health and Safety Development in Professional Hairdressing in Europe.

Country: Germany

Issue: Hairdressers are exposed to a number of chemical and physical risks all of which make them more susceptible to occupational skin diseases. Additionally, no agreed health and safety standards were previously set for this industrial branch.

Aim: Prevention of skin diseases in the hairdressing industry.

Actions:
- provision of workshops to the industry’s stakeholders (employee and employer organisations and trade representatives);
- development of an online and paper-based questionnaire for the respective professionals;

Results:
- provision of recommendations for the vocational training curricula of professionals working in the hairdressing industry;
- adoption of the Declaration of Dresden.

Why is this practice noteworthy?
- It supported the development of a common health and safety standard for the European hairdressing industry.

Learn more from: www.safehair.eu
Concerted action. National Press-Conference kick off

- 20.-24. September 2010 „Week Of Occupational Skin Diseases (WOOD)“
- 05.-09. December 2011 „Week Of Occupational Skin Diseases (WOOD)“
- 05.-09. November 2012 „Week Of Occupational Skin Diseases (WOOD)“
- 04.-08. November 2013 „Week Of Occupational Skin Diseases (WOOD)“

- Free service by dermatologists, free information by occup. physicians, statutory accident insurances, vocational schools…

www.hautgesund-im-Beruf.de

Effects of “healthy skin@ work” awareness campaign in Germany:
Reduction of underreporting

Occupational skin diseases in Germany:
Notifications (total)/ accepted as occupational/ recognized cases

Source: DGUV; German Social Accident Insurance
Underreporting
(ca. 30-50 fold)

> 2.000.000
(Prevalence)


Notificationsof occupational skin diseases 2009 vs. 2012

Skin (N_{total}=19,210): 29% of all notifications of occup. Diseases 2009 (66,951);
Skin (N_{total}=24,384): 35% of all notifications of occup. Diseases 2012 (70,566);
Source: DGUV (German statutory accident insurance)
# Costs of occupational skin diseases

**German Social Accident Insurance 2006 vs. 2011**

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>2011</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nr. of cases</td>
<td>Costs per case (€)</td>
<td>Total Costs (€)</td>
</tr>
<tr>
<td>Medical Costs</td>
<td>26,246</td>
<td>656</td>
<td>17,214 €</td>
</tr>
<tr>
<td>Job retraining</td>
<td>4,739</td>
<td>9,074</td>
<td>43,003 €</td>
</tr>
</tbody>
</table>

- **Cost reduction 2011 vs. 2006: ~10 million €**
  (not adjusted for inflation)
- **Increase of secondary prevention cases by 65%**

Source: German Social Accident Insurance (DGUV), 2013

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**Occupational Latex-Asthma (Airways disease)**

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Occupational Latex- contact urticaria

- pro-active workplace design
- OiRA

Skin diseases are one of the most important emerging risks related to the exposure to, and extensive use of, chemicals...

Positive patch tests to GMTG ("acid" perm) among hairdressers with contact dermatitis

W. Uter et al. 2006

GMTG: Glcerylmonothioglycolate ("acid" perm)
Replacement: Ammoniumthioglycolate ("alkaline" perm)

- pro-active workplace design
- OiRA

EU Research Foundation / COST: "Breakthrough scientific developments"

StanDerm

Aims
- Evidence-based instruments of OSD prevention and EU-regulations
- Safer work environments and expert access to early intervention
21st century: **non melanoma skin cancer**
caused by UV is . . .

- the most frequent of all cancers (US, EU, AUS, NZ)
- more expensive than all other cancers (AUS)
- one of the few almost totally preventable cancers
- one of the few cancers that can be healed
- increasing: annual incidence of 3-8% (US)

- one of the neglected occupational hazards
69 y, delivery truck driver for 28 y from Chicago. 25 y history of actinic damage by UVA through lateral car window.

59 y farmer
1 BCC paranasal (52 y). SCC occipital mult. AK, skin type I (fair), pronounced act. damage in occup exp. Areas only.

Gordon JRS, Brieva JC (2012) n engl j med 366:16
81y construction worker
> 40y UV exposure. First AK, SCC age 53; case rejected by accident insurance over 10 y

77y bricklayer
first SCC 1996 (then 60y), AK, BSM, postop. facial nerve palsy.
- Asbestos
- Arsenic
- Plutonium
- Radium 228…
- Solar radiation
- Ultraviolet radiation (wavelengths 100-400 nm, encompassing UVA, UVB, and UVC)
- Ultraviolet-emitting tanning devices
### ILO List Occup diseases 2010

#### 1.2. Diseases caused by physical agents

1.2.1. Hearing impairment caused by noise
1.2.2. Diseases caused by vibration (disorders of muscles, tendons, bones, joints, peripheral blood vessels or peripheral nerves)
1.2.3. Diseases caused by compressed or decompressed air
1.2.4. Diseases caused by ionizing radiations

#### 1.2.5. Diseases caused by optical (ultraviolet), visible light, infrared radiations including laser

#### 2.2. Skin diseases

2.2.1. Allergic contact dermatoses and contact urticaria caused by other recognized allergy-provoking agents arising from work activities not included in other items
2.2.2. Irritant contact dermatoses caused by other recognized irritant agents arising from work activities not included in other items
2.2.3. Vitiligo caused by other recognized agents arising from work activities not included in other items

#### EU Recommendation / Schedule on Occupational Diseases (2003/670/EC):

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Skin diseases and skin cancers caused by</td>
<td>154</td>
</tr>
<tr>
<td>201.01</td>
<td>Soot</td>
<td>154</td>
</tr>
<tr>
<td>201.03</td>
<td>Tar</td>
<td>154</td>
</tr>
<tr>
<td>201.02</td>
<td>Bitumen</td>
<td>154</td>
</tr>
<tr>
<td>201.04</td>
<td>Pitch</td>
<td>154</td>
</tr>
<tr>
<td>201.05</td>
<td>Anthracene or compounds thereof</td>
<td>154</td>
</tr>
<tr>
<td>201.06</td>
<td>Mineral and other oils</td>
<td>154</td>
</tr>
<tr>
<td>201.07</td>
<td>Crude paraffina</td>
<td>154</td>
</tr>
<tr>
<td>201.08</td>
<td>Carbazole or compounds thereof</td>
<td>154</td>
</tr>
<tr>
<td>201.09</td>
<td>By-products of the distillation of coal</td>
<td>154</td>
</tr>
<tr>
<td>202</td>
<td>Occupational skin ailments caused by scientifically recognised allergy-provoking or irritative substances not included under other headings</td>
<td>156</td>
</tr>
</tbody>
</table>

**First occup. disease:**
Skin cancer. Percival Pott, 1773

**UV radiation (solar, artificial)**
**Dir 2006/25/EC** artificial optical radiation


**Occupational non-melanoma skin cancer**

- Squamous cell carcinoma
- Basal cell carcinoma

Outlookworkers' risk compared to average population:
- Increased by 77%
- Increased by 43%
UV-Monitoring at outdoor workplaces (Unverricht, Knuschke et al. 2006)

List of Occupational Diseases Germany
Annex to the German Decree of Occupational Diseases
Ministry of Labor, 8/2013

SCC or multiple actinic keratoses
(>5 AK a./o. 2*2 cm fieldcancerisation)
Occup. origin: an approximation
(AK, SCC)

Years of occup exposure * 170 SED
(at max. exposure in Germany)

Age at first onset of skin cancer *  130 SED ≥ 0.4

Example:
50y, 15y UV-exposure
60y, 18y UV-exposure
70y, 21y UV-exposure
80y, 24y UV-exposure
90y, 28y UV-exposure

DGUV research projects (ABD, DGAUM, IFA, IPA)
• fp 170: criteria of occup origin, sum score & photographic guide for assessment of actinic damage
• fp 181: validation/ case control study
  n=800 SCC, n=800 BCC, n=1200 Controls
• Generation and extraction system for individual solar exposure (Genesis UV): dosimetry, data-logger from 4/2014

Prevention

Substitution (eg UV Index, exposure limits)
Technical measures (eg sun shields, covered tractors/machinery)
Organisational measures (not 11.00-14.00 o’ clock)
Personal protective equipment:
  Helmet with integrated neck protection, brimmed hats, UPF>40 clothing, LSF>50

EU Directive on solar radiation; including workers' education
(Dir 2006/25/EC: only artificial optical radiation)
Workplace UV resources
ICNIRP/ILO/WHO

Upcoming WHO-led UN guidelines on exposure limits for non-ionizing radiation (including UV)
WHO invites the involvement of the EC

Tasks for Occupational Skin Diseases (OSD) in Europe

- Prim & Sec prevention of OSD (from dermatitis to skin cancer): easy, pays. => include in EU Health Policy / Health&Safety Strategy 2014-2020
- Better registration/surveillance of OSD (EUROSTAT)
  Massive Underreporting. Coordination of criteria for recording/reporting in MS.
  Definitions “Work Related Diseases” vs. “(recognized) Occupational Diseases”
- Prevention programs / regulations on national and EU level
  Awareness campaigns, workers’ education be promoted
  Pre-active workplace design / work place organization / PPE
- Early OSD intervention strategies to be included in EU regulations/H&S Strategy
  Prevention Strategies preferably on tripartite level
  Gender balance in prevention and compensation. Recent EU social partners agreement in hairdressing:
  improvement even in SME dominated branches (mainly female workers). Social partners’ agreements on health&safety: special priority
- Update EU Schedule on Occup Diseases (2003/670/EC): Non-Melanoma Skin Cancer by UV
  Solar UV: Group 1 carcinogen [WHO]: relevant hazard in work place risk assessments. Implement ILO list.
  Need for EU work protection directive on solar UV-radiation (DIR 2006/25/EC: only artificial sources).
  Exposure Limits (up-coming WHO-led UN Guidelines on non-ionizing radiation, EU invited to participate)
- Addition to EU Schedule of OSD: “Diagnostic, exposure and preventive criteria for OD” (=> ILO; SCOD)
Swen Malte John, MD
Chair:
EADV Task Force on Occupational Skin Diseases
ICOH Scientific Committee "Occupational and Environmental Dermatoses"
COST Action "Development and Implementation of European Standards on Prevention of Occupational Skin Diseases (StanDerm)" (TD1206)

Professor and Chairman
Dept. Dermatology, Environmental Medicine, Health Theory
UNIVERSITY OF Osnabrück
Institute for Interdisciplinary Dermatological Prevention and Rehabilitation (iDerm) at the University of Osnabrück
Lower-Saxonian Institute of Occupational Dermatology
Sedanstrasse 115 (01), D-49069 Osnabrück, Germany
phone: +49-541-405-1810, fax: +49-541-969-2445
e-mail: johnderm@uos.de