Occupational Skin Disease

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Hobson Health
Seminar

• Introduction
• Incidence of work-related skin disease
• Statistics
• Contact dermatitis
• Occupational skin cancer
• Prevention
• Management
• Case studies
Dr John Hobson

• 25 years in occupational health
• 10 years with Michelin UK: head of health and safety and environment
• Hobson Health independent provider in West Midlands/North West for >10 years
• Editor of *Occupational Medicine* since 2002
• Co-editor of *Fitness For Work*
• Lecturer at Manchester, Birmingham and Keele universities
Hobson Health Ltd

• Provider of occupational health services since 1995
• Originally part of Michelin Tyre
• OH services only since Jan 2009
• Acquisition of Ashling in Northwich 2013
• An award winning business

www.hobsonhealth.co.uk
What is occupational health?

• Occupational health is concerned with the effects of work on health and health on work
• Working age ill health costs the UK economy £100 billion each year
HSE website

Work-related skin disease

• There are estimated to be over 35,000 new cases of work-related skin disease per year (THOR-GP 2010-2012).
• Number of new cases lower than a decade ago, but little change since about 2005
• Cases due to certain specific causes may still be increasing
• Most cases are contact dermatitis due to exposures to allergens and irritants (THOR-EPIDERM).
• Working with wet hands, and contact with soaps and cleaning materials are the most common causes of occupational contact dermatitis
• Occupations with the highest rates are florists, hairdressers, cooks, beauticians, and certain manufacturing and health care related occupations
Occupational contact dermatitis in Great Britain, 1996 – 2012

*IIDB figures for years 1995 to 2002 (diagonal shaded bars) are for claims assessed between 1 October of the previous year and 30 September of each year.
Specialist diagnosed skin disease

• 1500 cases reported to EPIDERM in 2012 (underestimate)
• 61% were women
• Half were aged <35
• Less likely to cause absence than other work-related disease
• Only 55 assessed for IIB

Skin disease

- Contact dermatitis: 76%
- Urticaria: 3%
- Cancer: 21%
High risk industries
(specific advice on the HSE website)

• Catering
• Hairdressing
• Health services
• Dentistry
• Printing
• Metal machining
• Motor vehicle repair
• Construction
What is dermatitis?

- Dermatitis is a skin condition caused by contact with something that irritates the skin or causes an allergic reaction. It usually occurs where the irritant touches the skin, but not always.
What does it look like?

- Redness
- Scaling/flaking
- Blistering
- Weeping
- Cracking
- Swelling
What does it feel like?

• Someone who has dermatitis may experience symptoms of itching and pain. The signs and symptoms of this condition can be so bad that the sufferer is unable to carry on at work.
Irritant contact dermatitis (ICD)

- Can occur quickly after contact with a strong irritant, or over a longer period from repeated contact with weaker irritants.
- Irritants can be chemical, biological, mechanical or physical.
- Repeated and prolonged contact with water (eg more than 20 hand washes or having wet hands for more than 2 hours per shift) can also cause irritant dermatitis.

- Wet work
- Soaps, shampoos and detergents
- Solvents
- Some food (eg onions)
- Oils and greases
- Dusts
- Acids and alkalis
Allergic contact dermatitis

• This can occur when the sufferer develops an allergy to a substance.
• Once someone is ‘sensitised’, it is likely to be permanent and any skin contact with that substance will cause allergic contact dermatitis.
• Often skin sensitisers are also irritants.

• Some hair dyes
• UV cured printing inks
• Adhesives
• Some food (eg shellfish, flour)
• Wet cement
• Some plants (eg chrysanthemums)
Occupations with highest rates 2004-2012

• Florists (118 cases per 100,000 workers per year)
• Hairdressers and barbers (94)
• Cooks (70)
• Beauticians (62)
• Metal working machine operatives (61)
The study found significantly increased incidence of work-related disease compared with other workers with similar levels of qualifications, training, skills and experience.

Skin neoplasia:
- Roofers x 6.3
- Painters and decorators x 2.1
- Labourers in building and woodworking trades x 6.6

Contact dermatitis:
- Metal workers x 1.4
- Labourers x 1.6
Contact dermatitis trends

- Allergic contact dermatitis is reducing in incidence
  - Removal of chromates from cement
  - Reducing use of latex gloves
- Some allergic contact dermatitis may be increasing such as from acrylates in beauticians
- Irritant contact dermatitis is increasing
Cement burns
Estimated annual change in incidence relative to 2005 of chromate attributed allergic contact dermatitis (ACD) in workers exposed to cement (group 2) and all other ACD. *Statistical test for difference in the overall annual trend for ACD between workers exposed to cement (group 2) and all other ACD.

Contact urticaria

- Contact urticaria is a wheal-and-flare (small swellings on the skin surrounded by areas of redness) response occurring rapidly on the application of certain substances to intact skin.
- It is probably more common than currently recognised.
## Causes of contact urticaria

<table>
<thead>
<tr>
<th>Agents</th>
<th>Type of workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foods, spices, herbs</td>
<td>Cooks, food preparation workers, other kitchen workers</td>
</tr>
<tr>
<td>Food additives, eg: Cinamic acid, benzaldehyde, benzoic acid, albumin</td>
<td>Cooks, food preparation workers, other kitchen workers, bakers and millers</td>
</tr>
<tr>
<td>Animal hair</td>
<td>Animal husbandry worker, veterinarians and nurses, laboratory workers</td>
</tr>
<tr>
<td>Latex proteins</td>
<td>Health care workers, animal husbandry workers, veterinarians, laboratory workers</td>
</tr>
<tr>
<td>Topical drugs</td>
<td>Health care workers, pharmaceutical workers</td>
</tr>
<tr>
<td>Disinfectants</td>
<td>Hair dressers, cleaners, kitchen staff</td>
</tr>
<tr>
<td>Resins</td>
<td>Construction workers, resin manufacturing, printers, nail technicians</td>
</tr>
<tr>
<td>Chemicals used in rubber production</td>
<td>Rubber processing workers</td>
</tr>
</tbody>
</table>
Occupational cancer

• The overall burden of occupational cancer in Great Britain is currently around 8000 deaths and 14 000 cancer registrations per year.

• This represents 8% of all cancer deaths in men and about 2% in women.

• Asbestos contributes half of the deaths followed by silica, diesel engine exhaust, radon, work as a painter, mineral oils, shift work, environmental tobacco smoke in non-smokers, dioxins, radon and work as a welder.

• Work sectors at risk of occupational cancer include construction, painting and decorating, manufacturing, mining, quarrying, utilities and the service industry including personal and household services.

• Occupational cancer is a preventable disease and occupational health has an important role in primary prevention.
## Occupational cancer

<table>
<thead>
<tr>
<th>Established and probable carcinogens IARC group 1 and 2a</th>
<th>Number of registrations attributable to occupation (2004)</th>
<th>Number of deaths attributable to occupation (2005)</th>
<th>Proportion of cancers attributable to occupation (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Bladder</td>
<td>496</td>
<td>54</td>
<td>215</td>
</tr>
<tr>
<td>Larynx</td>
<td>50</td>
<td>6</td>
<td>17</td>
</tr>
<tr>
<td>Lung</td>
<td>4632</td>
<td>816</td>
<td>4024</td>
</tr>
<tr>
<td>Mesothelioma</td>
<td>1699</td>
<td>238</td>
<td>1699</td>
</tr>
<tr>
<td>NMSC</td>
<td>2576</td>
<td>352</td>
<td>21</td>
</tr>
<tr>
<td>Sinonasal</td>
<td>101</td>
<td>32</td>
<td>29</td>
</tr>
</tbody>
</table>
What is skin cancer?

• One of the most common types of cancer. While most skin cancer is not to do with work, there are well-recognised causes for those that are linked with occupation.

• The most common causes of work-related skin cancers are:
  • ultraviolet light for those who work outdoors
  • ultraviolet light from sunbeds *(where there may be a risk for sunbed operators and their employees).*
  • some chemicals (such as polycyclic aromatic hydrocarbons [PAHs] from coal tar, pitch and unrefined mineral oils);
  • ionising radiation (eg from radioactive substances and X-rays).

• Some substances can get in through the skin and cause cancers in other parts of the body.
## Skin cancer

<table>
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<tr>
<th>Agents</th>
<th>Type of work</th>
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</thead>
<tbody>
<tr>
<td>UV rays from the sun</td>
<td>Outdoor work</td>
</tr>
<tr>
<td>Coal tar and derivatives</td>
<td>Coal tar handling, coal gasification, coal tar distillation</td>
</tr>
<tr>
<td>polycyclic aromatic hydrocarbons (PAHs)</td>
<td>Petroleum refining, coal tar distillation</td>
</tr>
<tr>
<td>Ionising radiation</td>
<td>Radiation-related work</td>
</tr>
<tr>
<td>Arsenic</td>
<td>Metal ore handling and smelting, pesticide manufacturing</td>
</tr>
<tr>
<td>Coke</td>
<td>Coke processing</td>
</tr>
<tr>
<td>Soot</td>
<td>Chimney cleaning</td>
</tr>
</tbody>
</table>
Ultraviolet radiation

• UV radiation from exposure to sunlight causes both melanotic and non-melanotic skin cancers (basal cell and squamous cell carcinomas)
• An excess of skin cancers in outdoor workers is only seen in those with fair skin.
• Initial presentation may be that of solar keratoses or a pre-malignant state.
• Immunosuppression can increase the risk
• Other possible additive factors are trauma, heat and chronic irritation or infection.
Basal cell carcinomas

- Most frequent cause of cancer
- Caused by UV exposure
- Rarely spreads
- Disfiguring
- Look for:
  - Open sore
  - Reddish patch or irritated area
  - Shiny bump or nodule
  - Pink growth
  - Scar-like area
ABCDE for melanomas

- **Asymmetry**
- **Borders** (irregular)
- **Colour** (variegated)
- **Diameter** (greater than 6 mm (0.24 in), about the size of a pencil eraser)
- **Evolving over time**
Malignant melanoma

- If in doubt, take it out
How to recognise a work-related cause

- Primarily on the hands and face
- Condition improves away from work and relapses on return
- More than one person affected in same work area or handling same materials.
Investigating skin disease

- Is there an obvious cause?
- Review the exposures
- Check the protective measures
- Is the condition worse at work and better away?
- Refer to occupational health
- Consider referral to specialist for patch testing if cause not obvious
Patch testing
Prevention: APC

- **Avoid** direct contact between unprotected hands and substances
- **Protect** the skin
- **Check** hands regularly for the first signs of itchy, dry or red skin
- Carry out health surveillance if exposure to sensitisers
Preventing ICD

• Reduce hand washing frequency
• Wash in lukewarm water only
• Use alcohol gels
• Use gloves if immersing hands in water
• Use cotton inners if >10 minutes
• Use moisturisers throughout day and after washing hands
• Follow the same advice at home
Case studies
Summary

- Occupational skin disease is common but preventable
- It is often not prevented, recognised, diagnosed, managed or reported
- Most occupational skin disease is contact dermatitis
- Most contact dermatitis is due to wet work or a small number of chemicals
- Occupational skin cancer is the commonest occupational cancer
- Occupational skin cancer is preventable
- Measures to prevent and manage occupational skin disease are simple and low cost
Any questions?