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Occupational Skin Disorders

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Consultations relating to cutaneous disorders in 13 general practices

Range - 3% to 18.8%

Mean - 8.4%

Eczema - 22.5%

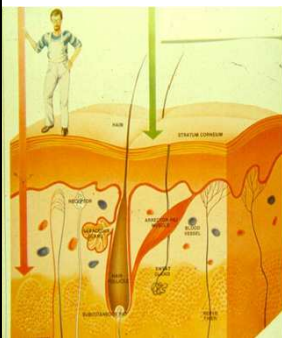
Infections - 20.3%

Benign tumours - 11.4%



Kerr, O. A., Tidman, M. J., Walker, J. J., Aldridge, R. D. and Benton, E. C. (2010),
The profile of dermatological problems in primary care.
Clinical and Experimental Dermatology, 35: 380-383.

Skin disorders account for >30% of all reported occupational diseases
>60,000 cases reported a year (grossly underestimated) - USA BLS data



Occupational Skin Disease

A pathological condition of the skin for which job exposure can be shown to be a major direct or contributory factor

Committee on Occupational Dermatoses,
American Medical Association



2010 National Health Interview Survey Data

(27,157 adults, incl. 17,524 current / recent workers)

Prevalence rate of dermatitis among current / recent workers

- 9.8% (range: 5.5-15.4%)

Represented 15.2 million workers with dermatitis



Luckhaupt, S. E., Dahlhamer, J. M., Ward, B. W., Sussell, A. L., Sweeney, M. H., Sestito, J. P. and Calvert, G. M. (2012), Prevalence of dermatitis in the working population, United States, 2010 National Health Interview Survey. Am. J. Ind. Med. doi: 10.1002/ajim.22080

Among the Workers

- 5.6% of dermatitis cases

(9.2% among healthcare workers)

were attributed to work by health professionals



Work-related dermatitis prevalence based on the NHIS-OHS approx 100 X higher than incidence rates based on the BLS Survey of Occupational Illness and Injury

Luckhaupt, S. E., Dahlhamer, J. M., Ward, B. W., Sussell, A. L., Sweeney, M. H., Sestito, J. P. and Calvert, G. M. (2012), Prevalence of dermatitis in the working population, United States, 2010 National Health Interview Survey. Am. J. Ind. Med. doi: 10.1002/ajim.22080

Dermatitis Skin Inflammation

Redness, swelling, fluid filled blisters, oozing of this fluid

Scaling, cracking, fissuring

Thickening of skin, color changes





Dermatitis

**Endogenous
(eczemas)**
e.g. atopic,
seborrhoeic,
varicose, discoid

**Exogenous
(environmental)**
e.g. contact



**Exogenous =
Environmental Dermatitis**



Contact Dermatitis



Irritant Contact Dermatitis

**Irritant
Dermatitis
Acute**

Chronic
- cumulative
insult dermatitis
to marginal
irritants





Metalworking Fluid / Cutting Oil / Coolant

Common Skin Irritants

Coolants, metalworking fluids

Alkalis (cement, ammonia), acids

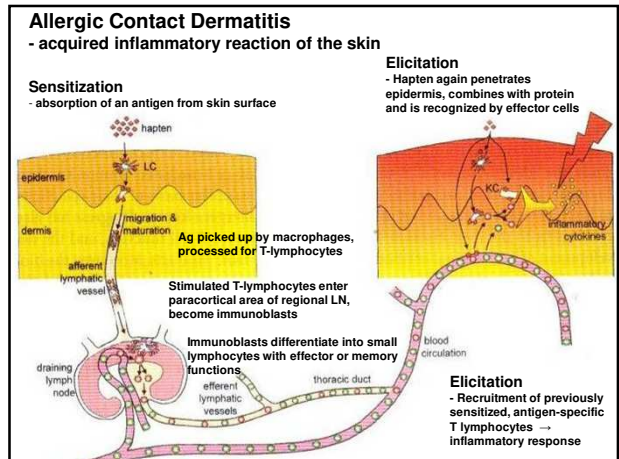
Solvents, oils, greases

Soap, detergent, water

Dusts, resins, powders



Allergic Contact Dermatitis



Common Skin Allergens

Metals – nickel, chromate

Rubber compounds – accelerators, antioxidants, vulcanising agents

Fragrances

Preservatives

Plants and woods





Contact Dermatitis

Is It Occupational ?

Location of rash

Work exposures / practice

Relation to holidays



Others affected ?

Other exposures ?



FACTORS TO CONSIDER

1. Work Practices and Habits
2. Work cleaning practices
3. Protective Equipment
4. Other Environmental Factors
e.g. domestic exposure, hobbies, treatment etc.
5. Individual susceptibility
6. Predisposing and aggravating factors
- Lacerations, abrasions, humidity, heat

Urticaria

Contact Urticaria







Skin Disorders Caused by Other Agents

Biological

- parasites, fungi, bacteria, viruses

Physical

- heat, cold, vibration, radiation

Chemical

- depigmenting, systemic effects



Work Related Skin Cancers



Preventive Strategies

- Remove / substitute
- Design / Engineering
- Washing Facilities
- Health Education
- General work environment
- Emollients
- Protective equipment
- Pre-placement examination
- Surveillance / notification





SUMMARY

Occup & Environ Skin Diseases are common

Most present as contact dermatitis on exposed areas, esp. of the hands (Irritant > Allergic)

Other types of OSD also present

e.g. urticaria, biological & physical causes, cancer

Be familiar with work exposures

Think of prevention as well as treatment

The skin can also be a route of entry for toxins

Further Reading

Koh D, Goh CL. Skin disorders.

In: Koh D, TC Aw eds.

Textbook of Occupational

Medicine Practice, 4th Edn.

Singapore: World Scientific;

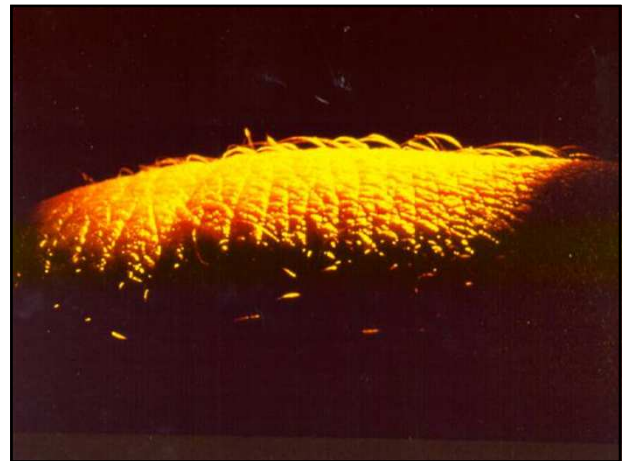
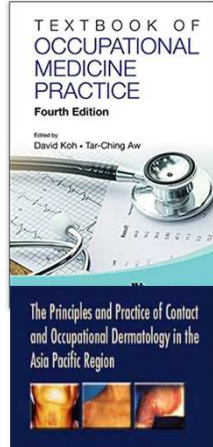
2017. p 91-136.

Principles and Practice of Contact
and Occupational Dermatoses in
the Asia-Pacific Region.

Eds NG SK, Goh CL, Gan SL, Koh

D, Leow YH. World Scientific

2001. ISBN 981024570X. pp 1-
236.



Estimate of the incidence of OSD in Europe

- 0.7–1.5 cases per 1,000 per year
- higher rates in specific high risk occupational groups

Diepgen TL. (2003) Occupational skin-disease data in Europe. *Int Arch Occup Environ Health* 76(5): 331-338.

UK - The Health and Occupation Reporting (THOR) network

- a voluntary surveillance scheme
- most reports of work-related skin disease were contact dermatitis
- Average annual incidence rates (per million) (2002-2005)
 - For dermatologists - 91.3 [95% CI 81.8–101.1] or [0.09/1000]
 - For occup physicians - 316.6 (95% CI 251.8–381.3) or [0.32/1000]

Turner S, Carder M, van Tongeren M, McNamee R, Lines S, Hussey L, Bolton A, Beck MH, Wilkinson M, Agius R. (2007) The incidence of occupational skin disease as reported to The Health and Occupation Reporting (THOR) network between 2002 and 2005. *Br J Dermatol* 157(4):713-722.

U.S. report (2004) - Burden of Skin Disease Study

- impact of US\$37 billion for 21 skin diseases
- (including costs of physician visits, hospitalizations, missed work, and medications)

Estimated burden from contact dermatitis

- 72.29 million episodes
- 9.2 million visits to clinics
- 1.6 million visits to emergency rooms costing about US\$1.918 billion

20–25% of all reported OSD resulted in time lost from work
Average of 10–12 lost work days per episode

Occupational Skin Disease and Quality of Life

Study of >1,000 nurses in a university hospital

- 22% reported occurrence of hand eczema
- Hand eczema associated with :
 - : nursing for >10 years (27% prevalence)
 - : working in a special care unit (29% prevalence)
- Hand eczema associated with suboptimal life quality
- Pruritus or burning sensations associated with a lower quality of life

Lan CC, Feng WW, Lu YW, Wu CS, Hung ST, *et al.* (2008) Hand eczema among University Hospital nursing staff: Identification of high-risk sector and impact on quality of life. *Contact Dermatitis* 59(5): 301–306.