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Current Trends Leading Work-Related Diseases and Injuries

The National Institute for Occupational Safety and Health (NIOSH) has developed a suggested list of 10 leading work-related diseases and injuries and has described the first eight categories on that list.* A discussion of the ninth category, Dermatologic Conditions, appears below.
DERMATOLOGIC CONDITIONS

Background. A worker's skin is directly exposed to the occupational environment and is susceptible to a large number of dermatologic injuries and other conditions (Table 1). Complete data on the extent and cost of dermatologic injuries are not available; however, dermatologic conditions other than injuries accounted for 37% of the 106,100 occupational illnesses recorded in 1983 in the Bureau of Labor Statistics (BLS) Annual Survey of Occupational Injuries and Illnesses** (1). Results from the BLS Annual Survey for 1972-1976))S indicated that 20%-25% of all occupational dermatologic conditions resulted in lost time from work (average 10-12 lost work days) (2). Similar data based on workers' compensation claims have been reported from California and South Carolina (3,4). Assuming that only 2%-10% of cases are actually reported, the annual cost of occupational dermatologic conditions resulting from lost worker productivity, medical care, and disability payments may range between $222 million and $1 billion (5,6).

Because 10%-15% of requests that NIOSH receives for health hazard evaluations involve skin complaints, and because the economic impact of work-related dermatologic conditions is substantial, NIOSH has included dermatologic conditions on its list of 10 leading work-related diseases and injuries in the United States (7).

Dermatologic Injuries. Dermatologic injuries are usually described as the immediate adverse effects on skin that result from instantaneous trauma or brief exposure to toxic agents involving a single incident in the work environment (1). Skin injuries may constitute 23%-35% of all injuries (8,9). Thus, based on 4,748,000 injuries of all types, and a full-time worker population of 74,750,000 for 1983 (1), an estimated 1,070,000-1,650,000 dermatologic injuries may occur yearly, with an estimated annual rate of skin injury of 1.4-2.2 per 100 full-time workers. The highest percentage of skin injuries are due to lacerations/punctures (82%), followed by burns (chemical and other) (14%) (8) (Table 2).

Other Dermatologic Conditions. Other dermatologic conditions ("illnesses of the skin") may also result from exposure to environmental factors or toxic agents associated with employment. However, they usually result from more sustained or cumulative exposures and involve longer intervals between exposure and occurrence of disease. These conditions include contact dermatitis, infection, acne, and skin cancer. Workers' compensation claims data from California suggest that 95% of these occupational skin conditions are either contact dermatitis (90%) or infections (5%) (3). Field investigations in the 1950s showed that at least 80% of occupational contact dermatitis cases may be caused by the irritating direct cytotoxic effects of causal agents rather than immunologically mediated allergic reactions (10).

The highest number of other occupational skin conditions (23,017) in 1984 occurred in the manufacturing sector; the highest incidence rate (28.5/10,000 full-time workers) involved the combined agriculture/forestry/fishing division (Table 3).

The clinical course for occupational contact dermatitis is relatively poor. In three studies, complete resolution occurred in 25% of workers affected; 50% improved but had periodic recurrences; and 25% developed persistent dermatitis as severe as or worse than the original condition (11-13). Contact dermatitis often necessitates job changes or modifications. Despite these, however, complete resolution may occur in only a limited proportion of cases.

Prevention of Work-Related Dermatologic Disorders. The most effective prevention measures are engineering controls that eliminate exposures of the skin to chemical, physical, or mechanical agents through isolation, containment, or redesign of industrial processes. Substitution of less toxic substances through chemical engineering may also be effective (14). Protective clothing should be selected on the basis of resistance to both chemical and physical hazards, as well as on the relative permeabilities to specific chemical exposures. Effective cleaning of skin and clothing is important, but workers should not wash vigorously or excessively with harsh soaps and detergents (15). Barrier creams have been suggested as alternatives, although their effectiveness has not yet been established (16). Prevention strategies should always include education of workers and management.

Expanded activities concerning occupational dermatologic conditions include improved methods for surveillance of occupational skin disease and vigorous research in dermatotoxicology to identify preventable risk factors and facilitate effective interventions at early stages. Reported by Div of Periodic Surveys and Supplementary Data Systems, Office of Occupational Health and Safety Statistics, Bureau of Labor Statistics, US Dept of Labor; Occupational Dermatology Activity, Industrywide Studies Br, Surveillance Br, Div of Surveillance, Hazard Evaluations, and Field Studies, Data Analysis Section, Div of Safety Research, National Institute for Occupational Safety and Health, CDC.

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*References to the previous articles are given in the most recent article (MMWR 1986;35:185-8). **The BLS Annual Survey provides yearly national estimates of incidence rates of occupational illness based on a randomly selected national sample of private-sector U.S. businesses from all industrial classifications. The survey records all new illnesses recognized during the reporting year (incidence) but does not measure continuing conditions from previous years (prevalence). SSince 1978, the Annual Survey has not tabulated lost workday statistics separately by type of occupational illness.

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