The Center
to
Protect Workers' Rights
Silver Spring, MD

Your patient is a construction worker with exposure to wet cement.

Construction workers are exposed to a number of chemicals known to cause irritant and allergic dermatitis. Portland cement, found in plaster and in concrete mixes, is extremely alkaline. Wet plaster also contains slaked lime, or calcium hydroxide, which is even more caustic than portland cement.

Further, portland cement contains trace amounts of hexavalent chromium. Hexavalent chromium is a strong sensitizing agent responsible for allergic dermatitis in cement workers around the world.

Other sensitizing agents include various epoxy adhesives and sealants in addition to various chemicals present in the admixtures used with cement and plaster.

Finally, construction workers may use products such as lanolin creams or lotions to soften their skin. Lanolin is a sensitizing agent. Some industrial hand cleaners contain limonene, also a sensitizing agent. The rubber in rubber gloves also may cause allergic dermatitis.

This pamphlet contains a partial listing of skin disorders, potential etiologic agents, and possible medical surveillance. Please maintain this in your patient's file. Sources of additional information about occupational dermatitis are printed on the back.

ADDITIONAL INFORMATION

For publications and information on workplace hazards contributing to skin disorders contact:

NIOSH

Education and
Information Dissemination
Division
Technical Information Branch
4676 Columbia Parkway
Cincinnati, OH 45226-1998

1-800-356-4674

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PHYSICIAN'S ALERT

Occupational Contact Dermatitis Among Construction Workers

The patient presenting this pamphlet is a construction worker who has frequent occupational contact with caustics, acids, and sensitizers.

Please keep this information for reference in the patient's file to aid in evaluation of possible skin conditions.

Best Practices

A worker training program teaches best practices for preventing occupational contact dermatitis, including:

Wash hands before putting on gloves.





Use a pH neutral soap or cleaner.

Try to avoid products with sensitizers, like lanolin or limonene.





Don't wear jewelry at work.

If they can't be left at the job, take work clothes home in a separate container. Launder them separately.





See a physician for a persistent skin problem, even a minor one.

Anything you can do to reinforce these behaviors is appreciated.

SKIN DISORDERS	ETIOLOGIC AGENTS	FINDINGS/SURVEILLANCE	INTERVENTION/TREATMENT
Xerosis (dry skin)	Alkalies; abrasive cleaners; solvents; soaps; water; sun; heat; cold; low humidity.	Dry skin; scaling; itchiness; burning; redness.	Skin exam and specific treatment; skin lubrication; change work practices: protective clothing/equipment; gloves; mild soaps; temperature/humidity control.
Irritant contact dermatitis (ICD) (acute, subacute, chronic)	Portland cement; plaster; lime; epoxies; solvents; other workplace products; abrasive cleaners; alkaline soaps; hand/barrier creams; other personal care products.	Skin exam; stinging; burning; pain; itching; blisters; dead skin; scabs, scaling; fissures; redness; swelling; bumps, dry or with watery discharge; usually concentrated where exposure occurs. **Diagnostic aids:** open application tests; do not patch test to known irritants; do not patch test to unknown chemicals.	Skin exam; skin lubrication; antibiotics for infections; astringent soaks; topical or systemic corticosteroids; antihistamines; UV; wash hands at least before eating or leaving work for the day with pH neutral cleaners; possibly add vinegar to neutralize alkaline wash/rinse water; prevent exposure; proper gloves; long sleeves over gloves; remove work clothes if soaked with wet plaster or epoxy.
Allergic contact dermatitis (ACD) (acute, subacute, chronic)	Portland cement; hexavalent chromium; other trace metals found in cement or concrete; plaster; lime; epoxy resins, hardeners, reactive diluents; some admixtures; lanolin; rubber; perfumes.	Skin exam; stinging; burning; pain; itching; blisters; dead skin; scabs; scaling; fissures; redness; swelling; bumps, dry or with watery discharge; usually concentrated where exposure occurs, but also occurs on other body parts; onset 2 to 7 days or more after exposure. **Diagnostic aids:** open application tests; commercially available skin patch tests (e.g., to some rubber, epoxy, and cement compounds); do not patch test to known irritants; do not patch test to unknown chemicals.	Skin exam; skin lubrication; antibiotics for infections; astringent soaks; topical or systemic corticosteroids; antihistamines; UV; wash hands at least before eating or leaving work for the day with pH neutral cleaners; identify offending agent and prevent exposure; proper gloves; long sleeves over gloves; remove work clothes if soaked with wet plaster or epoxy.
Cement/caustic burns	Portland cement; lime; other alkalies; epoxy components.	Blisters, dead or hardened skin, black or green skin.	Flush with copious amounts of water; buffered solution to neutralize alkalies; burn wound care; surgery; skin grafting; physical therapy. **Cement burns are alkali burns. They can progress and should be referred to a specialist without delay.**
Caused by mechanical trauma	Friction; pressure; pounding.	Redness; blisters; abrasions; thickening; discoloration; fissures; corns/callosities, hives.	Skin exam and specific treatment; change work practices: use of proper tools, protective clothing/equipment.
Caused by solar radiation, climate, temperature	Sun; heat; cold; sweat; low or high humidity.	Burns; dry skin; scaling; itchiness; burning; blisters; sweat pore blockage (miliaria); maceration; frostbite; immersion foot; discoloration; waxy skin; redness; swelling; tenderness; numbness; hives; gangrene.	Skin exam and specific treatment; sunscreens; change work practices: protective clothing/equipment; temperature/humidity control.
Contact urticaria (hives)	Latex; rubber; epoxy resins; leather; clothing; cold; heat; sun; water.	Skin exam; hives; swelling; redness; itchiness; pain. **Diagnostic aids:** skin prick test; RAST tests; patch tests; Contact urticaria can progress to include symptoms of nasal congestion, asthma, and rarely anaphylaxis.	Identify and avoid offending agent; skin exam and treatment; antihistamines, systemic corticosteroids.

Visiting the worker's jobsite or reviewing the Material Safety Data Sheets of products used there may help to determine what substances the worker is exposed to, the degree and duration of the exposure, the methods and agents used to clean the skin, and the type of protective clothing used.