Physicians' Alert:

Occupational Contact Dermatitis among Construction Workers

This Alert was developed to help ensure that all construction workers at risk of developing occupational contact dermatitis from work exposures are properly diagnosed and treated.
Please:

(1) read and print this Alert;

(2) keep the Best Practices tips to help you work safely; and

(3) fill in the "To My Doctor" form and give it to your doctor to include in your medical records.

Best Practices for You

The following are selected best practices for protecting your skin and preventing occupational contact dermatitis:

- Wash hands and dry completely before putting on gloves. Clean hard hat liner daily.
- Use a pH neutral soap or cleanser.
- 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 separately.
- See a physician for a persistent skin problem, even a minor one.

To learn more visit:

- **ChooseHandSafety.org**
  https://choosehandsafety.com/
- **OSHA Safety and Health Topics: Dermal Exposure**
  https://www.osha.gov/SLTC/dermalexposure/index.html
- **NIOSH Workplace Safety and Health Topics: Skin Exposures & Effects**
  https://www.cdc.gov/niosh/topics/skin/

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CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

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To My Doctor Form

To My Doctor: I am a construction worker who has frequent occupational contact with caustics, acids, and sensitizers. Please keep this information for reference and to aid in evaluation of possible skin conditions.

This document should be filed in the medical records of (patient's full name):

_____

Date of Birth: _____ / _____ / _____
Month Day Year

Your patient is a construction worker with exposure to materials such as wet cement and plaster, epoxies, foams, and coatings.

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

Other sensitizing agents include various epoxy and isocyanate adhesives and sealants, isocyanates in polyurethane foams and coatings, and various chemicals present in the admixtures used with cement and plaster.

Construction workers may also use products that contain sensitizing agents such as lanolin creams or lotions to soften their skin, and/or industrial hand cleaners that contain limonene. In addition, construction workers frequently wear gloves, some of which may contain sensitizing agents.

Additional information, including a partial listing of skin disorders, potential etiologic agents, and possible treatment can be found on page 2 of this Alert.

Diagnosing Contact Dermatitis

The following questions, can be used to screen patients for work-related skin disorders:

- How long have you had this skin problem?
- Are there specific products, substances that you use, or tasks that you perform that seem to make the skin problem worse?
- Does it get better if you have been away from work?
- Have you had anything like this before?

Whenever possible, perform these tests prior to advising the patient regarding employment. Consider referring the patient to a dermatologist or occupational medicine physician familiar with work-related diseases for assistance with diagnosis and management, and to protect the patient's legal rights in the workers' compensation system.

For more information about occupational health, see the Association of Occupational and Environmental Clinics (AOEC) at www.AOEC.org.

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Common Skin Disorders, Etiologic Agents, Symptoms and Treatment

Skin Disorders	Etiologic Agents	Symptoms	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 and Chronic	Portland cement, plaster; lime; fiberglass, 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.	**Skin exam and specific treatment**; skin lubrication; antibiotics for infections; Aveeno* baths; topical or systemic corticosteroids; antihistamines; wash hands at least before eating and leaving work for the day with pH neutral cleaners; prevent exposure; proper gloves; long sleeves over gloves; remove work clothes if soaked with wet plaster or epoxy.
Allergic Contact Dermatitis (ACD) Acute, Subacute and Chronic	Portland cement; hexavalent chromium; other trace metals found in cement or concrete; plaster; lime; epoxy resins; isocyanates in adhesives and polyurethane foams and coatings, 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.	**Skin exam** - Diagnostic aids: open application tests; commercially available skin patch tests (e.g., to some rubber, epoxy, and cement compounds); do not patch test to unknown irritants, do not patch test to unknown chemicals. **Treatment:** Skin lubrication; antibiotics for infections; Aveeno* baths; 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; ulcers.	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 including work glasses/safety glasses
Caused by Solar Radiation, Climate and 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. Skin cancers can be caused by solar radiation but also by some roofing materials such as asphalt.
Contact Urticaria (hives)	Latex; rubber; epoxy resins; leather; clothing; cold; heat; sun; water.	Hives; swelling; redness; itchiness; pain.	**Skin exam, Identify and avoid offending agent;** Diagnostic aids: skin prick test; RAST test; patch test; contact urticarial can progress to include symptoms of nasal congestion, asthma and rarely anaphylaxis. **Treatment:** antihistamines; systemic corticosteroids.

*References to commercial products by trade name, trademark, manufacturer or otherwise do not constitute or imply their endorsement or recommendation by CPWR.