A Builder's Guide to Avoiding Skin Problems

From cracked fingertips and contact allergies to cement burns and skin cancer, the prevention is better than the cure

BY ART PAPIER

The skin is a selectively permeable, elastic membrane. The body's largest organ, skin is siding, sheathing and vapor barrier rolled into one. And just like some commercial products, skin comes in many colors and thicknesses, with durability depending on location and patterns of use.

Under the impression that it's a maintenance-free product, most builders and carpenters give little thought to the skin. Yet builders have much more exposure to the sun and to job-related abrasives and chemicals than the average person. So it's likely that the rate of skin damage will be higher among construction workers.

In truth, each one of us ought to have a cautionary label for our skin: "Warning: This product may develop acute failure with very little notice. Improper care of this product will result in diminished function, and you will wish you had paid more attention to preventive maintenance."

In my practice as a dermatologist, I see the results of neglected maintenance every day. I'd like to cut down on my own business by offering the following tips.

Avoid the sun

Without a doubt, the most serious skin problem common to builders is skin cancer, which results chiefly from exposure to the sun. And the fairer your skin, the more vulnerable it is to sun damage. Research suggests that ultraviolet radiation causes skin-cell mutations that prevent cells from either repairing or replacing themselves as they should. There is also evidence that chronic sun exposure can suppress the immune system; this suppression may also promote the growth of skin cancer.

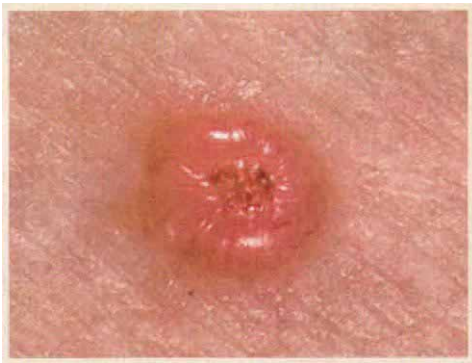
Ultraviolet light includes both UVA and UVB. Their effects are not all clearly understood; but it is possible that early-generation sunscreens and sunglasses that blocked only UVB allowed longer wavelength UVA to get through. The most prudent strategies for working in the sun are to wear a hat, sunglasses and long sleeves; to avoid working outside during the hottest part of the day; and to use a UVA and UVB sun block rated SPF 30 or higher.

The skin cancers discussed here all begin in the epidermis, the outer layer of skin. The epidermis primarily comprises three different kinds of skin cells: basal cells, squamous cells and and pigment- or melanin-producing melanocyte cells. Basal cells are at the basement level of the epidermis. Cells replicate at this level, and then, over a month's time, they move up, flatten out and are shed. The flattened ones are squamous cells. The melanocytes are not a layer but are interspersed at the basal level. The kind of cell in which a cancer originates determines whether the cancer is called basal cell, squamous cell or melanoma.

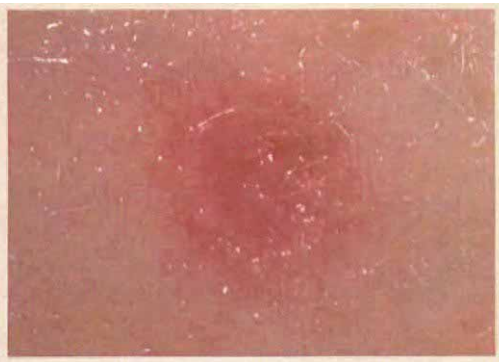
Basal-cell carcinoma is the most common of all cancers. It will be diagnosed roughly

BASAL CELL IS THE MOST COMMON SKIN CANCER

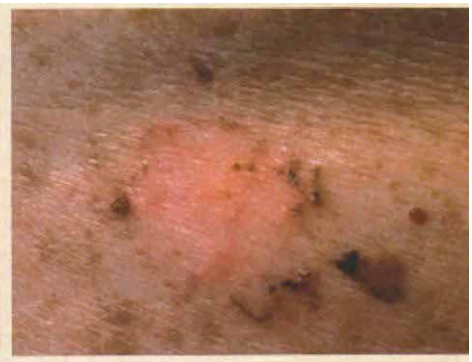
Basal-cell carcinoma usually develops in sun-exposed areas and comes in three forms that vary in appearance from the obviously wrong (left) to a simple rough patch (right). A doctor should see any spot larger than a pencil eraser.



Nodular basal-cell cancers are raised, feel like a bump in the skin and often have a dimpled center and a raised, shiny edge with fine blood vessels visible.



Locally infiltrating basal-cell cancers may appear to be just shiny scarlike areas, but like an iceberg, they hide most of their mass below the surface.



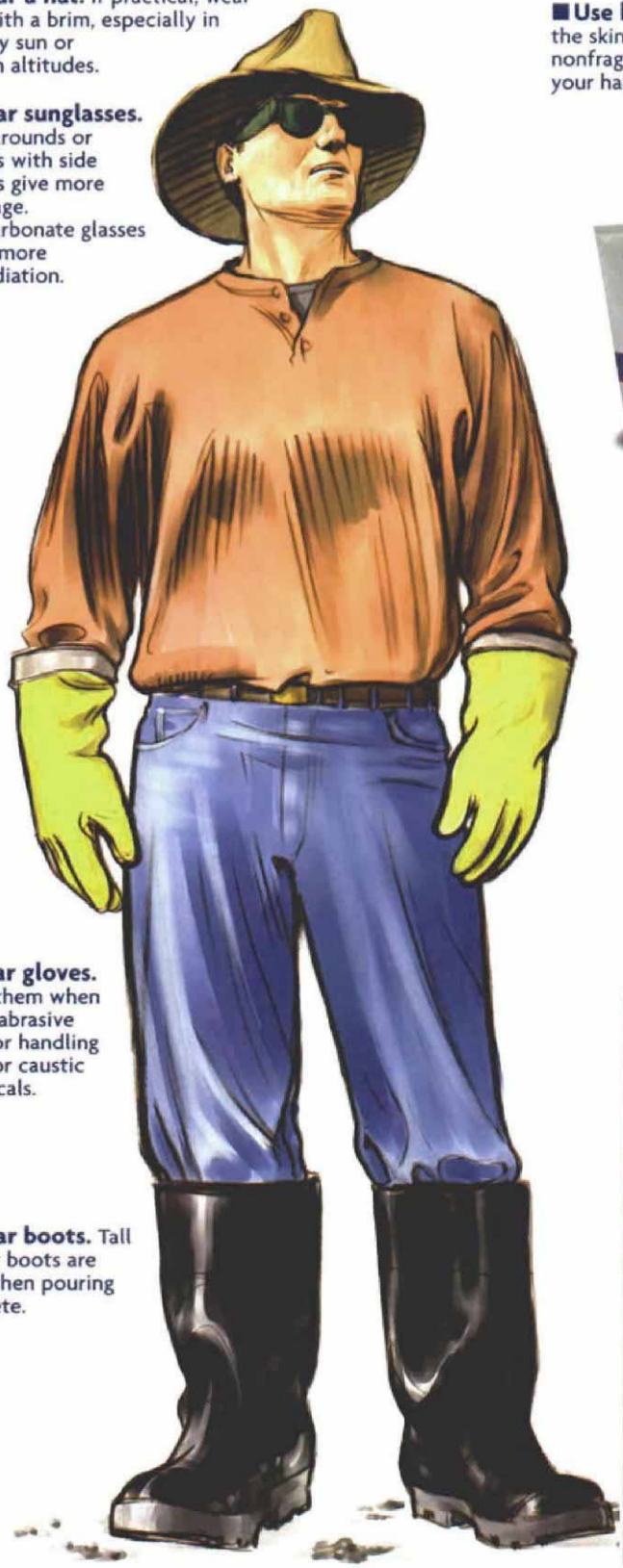
Superficial basal-cell cancers might look like reddened patches and might simply be dismissed as normal wear and tear on work-toughened skin.

SIMPLE PREVENTIVE MEASURES TO KEEP YOUR SKIN HEALTHY

Whenever possible, schedule outdoor work to avoid midday sun, and take the following precautions to protect yourself from sun and other environmental wear.

■ Wear a hat. If practical, wear one with a brim, especially in midday sun or at high altitudes.

■ Wear sunglasses. Wraparounds or glasses with side shields give more coverage. Polycarbonate glasses block more UV-radiation.

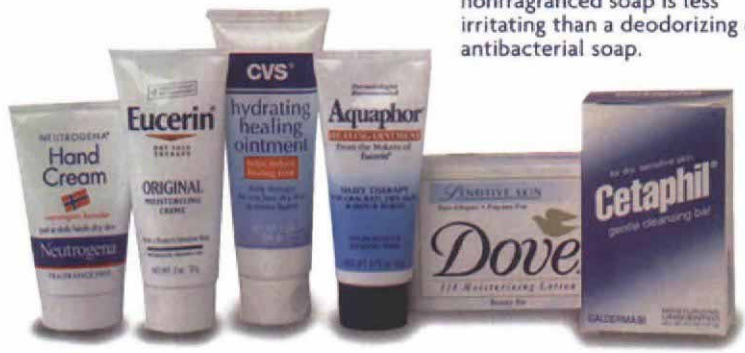


■ Wear gloves. Wear them when doing abrasive work or handling toxic or caustic chemicals.

■ Wear boots. Tall rubber boots are best when pouring concrete.

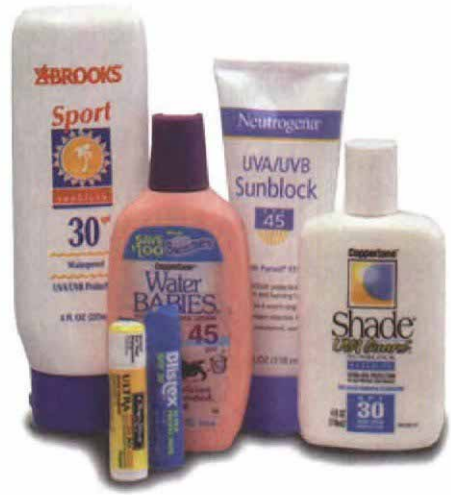
■ Use hand cream. Creams stay on the skin longer than lotions. Apply a nonfragranced cream after washing your hands or bathing.

■ Use a moisturizing soap. A moisturizing or nonfragranced soap is less irritating than a deodorizing or antibacterial soap.



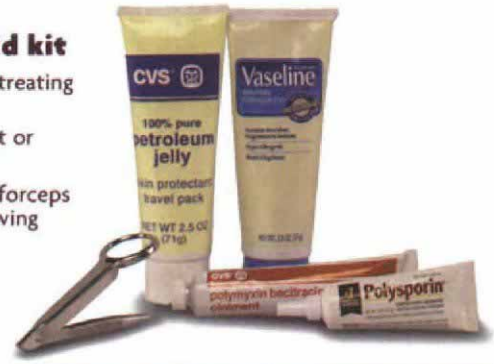
■ Use sun block. Use at least an SPF 30, which shields both UVA and UVB.

■ Wear lip balm with sun block. Don't forget the lips. Constantly chapped or scaly lips are frequently a forerunner to lip cancer.



Items to add to your first-aid kit

- Petroleum jelly for treating cracked fingertips.
- Polysporin ointment or equivalent.
- Medical-grade fine forceps or tweezers for removing splinters.
- Inexpensive magnifying lens.



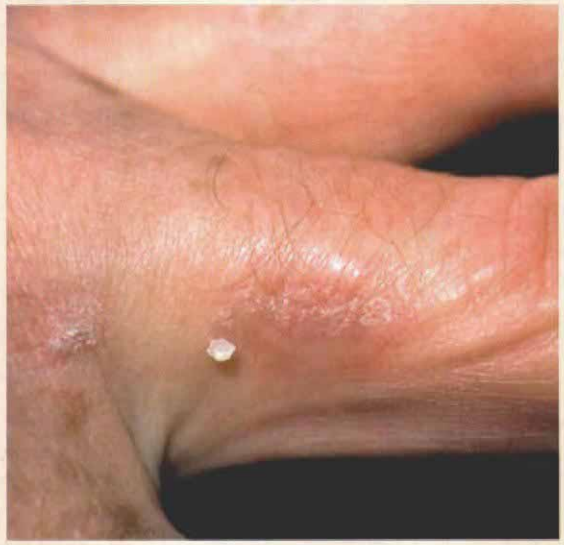
Items to remove from your first-aid kit

- Some triple antibiotic creams contain neomycin, which does its job well but is also a common delayed-contact allergen sensitizer.
- Hydrogen peroxide has been shown to retard healing in surgery patients and may damage cells. Careful washing with soap and water is sufficient for most cuts.

Drawing: Matt Collins

SQUAMOUS-CELL CANCER: A MEDIUM RISK

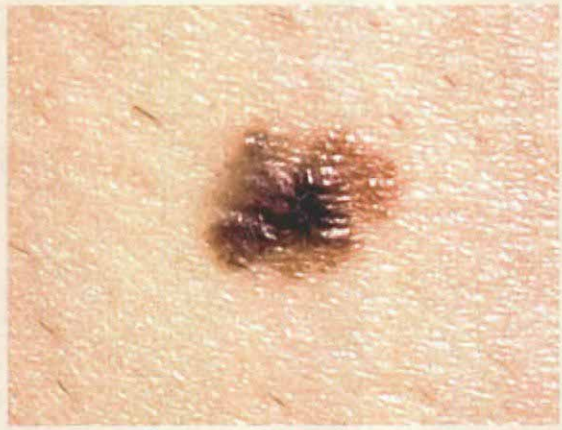
Squamous-cell carcinoma begins in the outermost layer of skin. It can occur either in the mouth, caused by tobacco use, or in skin subjected to intense sun. A small, scaly lesion (photo right) might begin as a patch of rough skin, but it can spread to the internal organs.



Squamous-cell carcinoma. This lesion can begin as a patch of firm, rough skin. Squamous-cell carcinomas can spread to internal organs.

MELANOMAS ARE THE MOST DANGEROUS

An early melanoma (photo right) may not look threatening, but it can spread throughout the body and is life-threatening. Melanomas often appear as small, dark or black moles. Besides getting bigger, advancing melanomas (photo below) may look less like the average mole. The ABCs of melanoma warning signs are A for *asymmetric* shape, B for irregular *border* and C for dark or uneven *color*. Occasional bleeding might occur at any stage.



An early melanoma might look like a mole but show color variations. Check spots wider than a pencil eraser.

An advanced melanoma has an irregular border and an asymmetrical shape.

1 million times this year in the United States alone, occurring most often on sun-exposed areas, especially the face, ears, neck, back and hands. Basal-cell carcinomas include three types: nodular, locally infiltrating and superficial (photos p. 94). Their appearance can vary from a raised, round bump to a firm, scarlike lesion or simply a red, rough area of skin. These usually slow-growing, solitary, shiny lesions sometimes bleed with the slightest trauma, and small blood vessels can sometimes be seen within them. These lesions don't go away. Any growth that remains for more than a month or two should be checked by a physician.

The important thing is not to postpone medical visits. Although basal-cell carcinomas almost never spread to distant sites in the body (metastasize), they can enlarge into locally destructive tumors, requiring sophisticated surgical repair, such as skin grafting. Having basal-cell carcinomas biopsied and removed early results in smaller scars and easier surgery.

Squamous-cell carcinoma is less common than basal-cell carcinoma, but this type is more serious. Squamous-cell cancers spread internally and should be recognized and treated as early as possible. These mutations can be triggered either by the sun or by tobacco. Squamous-cell carcinoma occurs inside the mouth among people who smoke or chew tobacco, but it also occurs on the skin of people who spend a lot of time in the sun (top photo). The typical patient with squamous-cell carcinoma will have other signs of chronic sun damage: sun-induced freckles and rough, small, dry skin areas called actinic keratoses.

A third skin cancer, melanoma (center and bottom photos), is especially dangerous because it is the most likely to spread to internal organs. A life-threatening cancer, it occurs most often in people with a family history of melanoma, people with a large number of moles and people with a personal history of blistering sunburns. Occurring less frequently than other skin cancers, melanoma is projected to develop in one of every 100 Americans over the course of their lives (or about 40,000 cases this year). According to a Michigan State University summary of cancer statistics, "Melanoma accounts for about 4% of skin-cancer cases but causes about 79% of skin-cancer deaths."

Remember the ABCs of melanomas: A for *asymmetric* shape, B for irregular *border* and C for dark *color*. In simplest terms, any mole or pigmented lesion that is much darker than other moles needs to be checked. Any new mole, itching mole or multicolored mole

PROBLEMS WITH CEMENT

Cement poses two kinds of risks. The lime in wet concrete and mortar can cause chemical burns if in contact with skin for long periods (photo right). Over time, the body can develop an allergy to the chromium in cement. With cement allergies, even brief contact can cause a reaction (photo below).

Cement burn. The lime in wet cement is caustic. Here, a worker at a pour let wet concrete soak into the fabric of his pants above his boots.

Cement allergy. This allergic reaction to the chromium in cement came after years of apparently trouble-free work.

should also be checked. These spots can appear either as small new moles or as changes in existing moles.

Skin-cancer screening does not require that you be poked, probed or X-rayed; the problem is easily diagnosed. Frequent self-exams are an important form of surveillance. If you suspect a problem or are at high risk for skin cancer, consult a doctor.

Builders are exposed to more than just the sun

Builders, masons and laborers often suffer small but painful cracks or fissures on the knuckles and fingertips. Unless caused by chemical exposure, these cracks usually develop in the fall and winter as a result of combining drier air with the usual rough duty to which a builder's hands are put. Using a moisturizing soap such as Dove and then moisturizing creams such as Cetaphil will help to prevent these cracks from forming. If they do form, moisturizing each fissure with petroleum jelly and covering it with a bandage or tape before bed will ease the discomfort and help them to heal. Of course, taping your fingers during the workday and wearing gloves when possible helps, too.

Common materials can cause irritation and allergies

Besides causing general wear and tear such as cuts and dry, cracked fingertips, building exposes the skin to a number of materials that cause irritation or allergies. A contact allergy should be distinguished from contact irritancy. Irritancy occurs when harsh chemicals degrade the skin barrier and cause inflammation. Caustic substances such as bleaches, acids or alkalis irritate the skin. The skin becomes red, sometimes raw, tender, scaly or cracked. Rubber gloves can protect your hands from caustic substances as long as chemicals do not get between the glove and the skin. In rare instances, however, repeated use of rubber gloves results in sensitization to the chemicals that make up the glove, resulting in an allergy.

In a true allergy, small quantities of an allergen contacting the skin can cause a severe immune response in previously sensitized people. The delayed immune responses are triggered by repeated exposure over the years and never occur with first exposure. Delayed immune response appears as a severe red, itchy, sometimes blistering rash in the areas contacted by the allergen. Poison ivy is the most common cause of a severe delayed immune reaction, but epoxies, metals, cements and even wood are all potential job-site causes of allergic skin reactions. Allergies are relatively rare as a result of contact with wood (though it does happen). Unfortunately, builders are exposed to much more than wood.

I recently treated a 60-year-old patient who developed a severe reaction to the formaldehyde used as a wood preservative. After years of exposure, he had become sensitized and developed a body-wide rash after handling formaldehyde-treated particleboard. He now must avoid composite lumber and any other products containing formaldehyde. Decreasing his contact with formaldehyde over the years by avoiding these materials or by wearing protective clothing and perhaps even a respirator to guard against inhalation might have prevented this problem. Other common allergens include acrylates in some adhesives, nickel in hand tools, and preservatives and fragrances in hand cleansers.

Cement: allergy, irritancy or burn?

The drying and abrasion of the skin while working with concrete and mortar is simple dermatitis. But cement work can also cause serious problems through contact allergies or burns. Repeated exposure to chromium and chromates can result in allergic contact dermatitis. Chromium, an impurity frequently found in cement, can sensitize certain individuals, usually those with long-standing exposure, and cause an allergy (bottom photo).

Cement burns occur when skin contacts wet cement or, rarely, improperly hardened cement (top photo). In a chemical or caustic burn, skin cells have been damaged irreparably. The high alkalinity of the lime in wet cement causes severe ulcerating burns if skin is exposed for too long. These burns can penetrate the full thickness of the skin and require emergency and surgical care. Cement burns can be avoided by wearing rubber boots and gloves, by washing immediately after cement work and by not wearing clothes with cement dust in them until they have been washed. If you have a cement burn, you should rinse the area with water and immediately seek emergency medical care. □

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Top photo this page: Dr. Paul Auerbach