



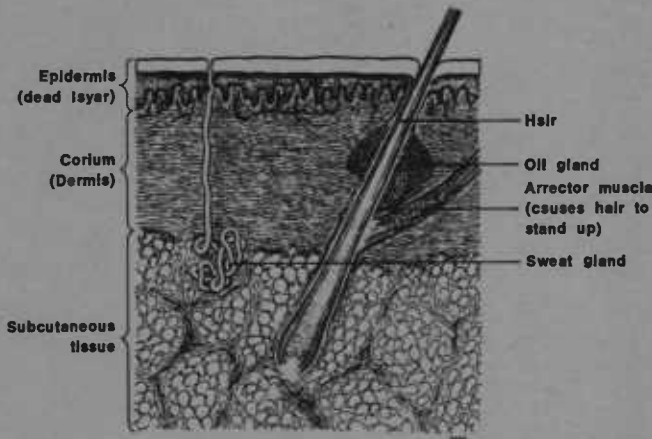
Work-Related Skin Problems

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Skin problems on the job can be irritating, time-consuming, uncomfortable, distracting, unattractive, and painful. Skin problems seldom offer a major threat to life or safety, except when on-the-job distraction is responsible for accidents and injury. In California during 1972, skin trouble accounted for almost 40 percent of all occupational diseases contracted during work.¹ Similar information was reported from Oregon, although such statistics are not recorded.²

or washed away. However, if this barrier is broken by some type of penetration such as a cut, scratch or rash, the more delicate underlying tissue is subject to irritation or damage.

People in farm-related occupations are exposed to a wide variety of situations that may contribute to skin problems. Dermatitis (inflammation of the skin evidenced by itching, redness and various skin lesions) generally results from either mechanical irritation of the skin or allergic (sensitization) reaction. Skin irritants might include: poison oak and other plants; corrosive chemicals, either acids or alkalines; sunlight or other photochemical activity; hot weather, frostbite or extreme cold; clothing; soap or detergent; friction; and various allergic reactions. Allergic or sensitization reactions occur only to those individuals who are hypersusceptible to certain skin irritants.



Skin cross-section showing various layers and parts. The prime function of the skin is to serve as a protective envelope for all underlying tissues.

Skin Problem Characteristics

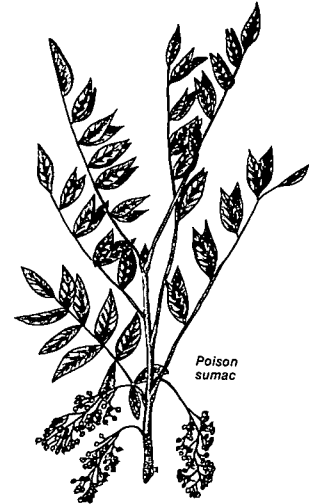
Skin trouble usually shows up as a rash, redness or breaking out of the skin. Healthy skin has a protective outer layer of dead cells that is mildly acidic with an oily coating and will withstand the harmful effects of exposure to many potential irritants. Skin has the capability of continual self-renewal when the protective outer area is rubbed

Most people will suffer some sort of response to irritants such as chemicals, heat or cold, friction, caustic vapors and gases. These reactions can be the result of prolonged exposure to low concentrations or brief exposures to more intense concentrations. Allergy is not a factor in such conditions. Allergic or sensitization dermatitis follows the exposure of the individual to a sensitizing material. Once exposure and sensitization have occurred, future exposure—even to small amounts of the sensitizing material—can result in a more severe allergic reaction. In such cases, the sensitized individual may or may not be able to continue working with that substance, depending upon how well exposure can be controlled by protective clothing, gloves, and special respirators.





“Leaves of three,
Let them be;
Berries white,
Poison in sight.”



Poisonous Plants

Poison oak, ivy, and sumac are some of the more common irritants and sensitizers. In California poison oak usually accounts for about 25 percent of all cases of skin problems.

Poison oak is most commonly found along the coastal areas of Washington, Oregon and California but it is also found in many other locations of the western states. Since poison oak is the most common of the skin-irritating and sensitizing plants in the West, all references here will be to poison oak. However, *poison ivy*, a climbing vine found in most parts of the country, and *poison sumac*, a shrub-like plant found primarily in the southeastern states, are very similar in their effects on human skin. The precautions, first aid procedures and follow-up activities are essentially the same for exposure to all three plants.

Poison oak is a vine-type shrub with notched leaves arranged in characteristic triple leaf pattern, having prominent veins and shiny surfaces. The active irritating substance in poison oak, ivy and sumac is an oil called urushiol. It is an extremely irritating oily resin that does not evaporate except at temperatures above those tolerable to man. You cannot be poisoned merely by being in close proximity to the plant, but fumes or smoke from burning plants are very toxic and can cause a severe reaction, either external or internal. The leaves are green with a glossy-waxy appearance in the spring—the most noxious time for many people. The color changes to red or orange in the fall. The dormant plant is also poisonous, as are the fruit and roots.

The period between exposure and the onset of symptoms may vary from a few hours to several days. Symptoms include a reddening of the skin and the formation of small blisters, usually accompanied by itching. In severe cases, large blisters appear, marked with swelling and high temperature.

First Aid: If you have had any assumed contact with poison oak, ivy, or sumac, take remedial action within the first hour if possible. Carefully remove contaminated clothing and wash in detergent and water and rinse thoroughly. (Contact with contaminated tools, clothing, etc., can also produce a reaction.) Hands and any other body parts which may have been in contact with these plants should be thoroughly washed with any good detergent soap or shampoo and water, then rinsed with clean water several times. (Some physicians suggest using cool or tepid water to reduce possible spreading of the oily plant substance on the skin surface and lessen absorption through skin pores). Next take a shower and thoroughly wash the entire body with detergent soap and water. Rinse several times with clean water. Do not use oily ointments or alcoholic solutions as a first aid measure because they may serve to spread the irritation, since the oily substance of poison oak is soluble in both fats and alcohol. In severe cases, contact a physician for treatment.

Prevention: If you know you are going to work in an area with poisonous plants, wear protective clothing, gloves, etc., which cover the body as completely as possible—do not touch your face with contaminated gloves or clothing. Keep skin

away from contact with the plants. Become familiar with appearance of local poisonous plants before you work in fields where you may come in contact with such plants. In case of more severe expected reactions, preventive medication in oral or injectible form might be necessary, as well as an ointment to protect exposed skin areas. However, a physician should be consulted before resorting to these measures.

Chemical Agents

Dermatitis in agriculturally-related work is most frequently caused by chemical agents. Some common chemical agents, their associated danger, and necessary first aid are listed below. Before using a chemical, read the label carefully for instructions on its proper use. In some cases, special protective clothing may be needed. This clothing might be a disposable type to reduce contamination.

Fuels and Solvents: *Aromatic hydrocarbons* are found in paint thinners, rubber cement, dopes, fuels and commercial mixtures. When using these

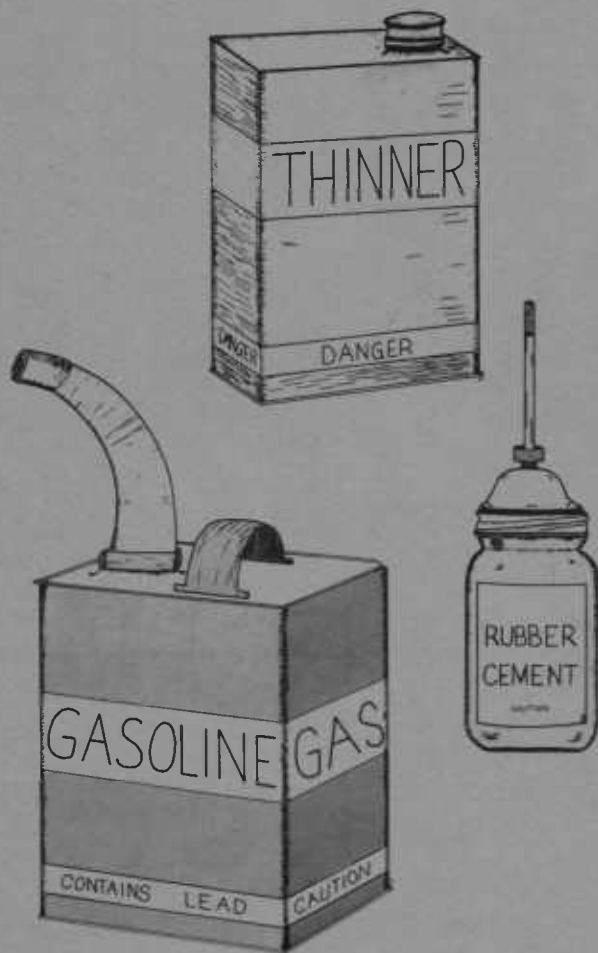
chemicals, mechanical ventilation may be necessary to provide sufficient fresh air circulation. Limit direct contact with these agents, and wash contact areas of skin as soon as possible. Repeated exposure can result in weakness, increased nervousness, loss of weight, bleeding from the gums, nose and rectum or uterus and altered menses in the female.

Fuels containing *tetraethyl lead* are readily absorbed through the skin pores. Complete skin protection is essential to prevent skin poisoning from contact with gasoline and other fuels, especially from those containing tetraethyl lead.

Insecticides, herbicides and pesticides are used frequently in farm operations. These chemicals must be used as directed on labels. In most reported cases, human poisoning by these agents has resulted from accidents or improper handling or care, rather than from proper applications of the material. Contact with solutions and powders of these agents should be avoided. Use gloves and protective clothing and follow the instructions carefully. Wash skin thoroughly with water and detergent soap if contact occurs. In some cases immediate aid from a physician is needed.

Metal hydrides are compounds of hydrogen and alkali metals such as sodium, potassium and calcium. They react with water to form caustic hydroxides and cause irritation to the eyes, skin and mucous membranes. They also release large amounts of heat in reacting with the moisture of the skin. To reduce contact, wear protective clothing and gloves. In dusty conditions, wear a respirator and possibly headgear to protect the facial skin. Wash thoroughly with soap and water after contact with metal hydrides.

Pentachlorophenol or Penta is commonly used in wood-preserving solutions for protection against fungi, vermin, and termites. It can cause severe dermatitis, and a few fatalities have occurred from prolonged contact of the hands and forearms with a 3 percent solution. Workers handling solutions more concentrated than 10 percent should wear heavy rubber gloves, rubber sleeves and aprons. If solution is spilled on the skin, wash off immediately with strong soap and plenty of water. In all cases, washing the skin thoroughly with soap and water after contact with this agent will reduce the chance of skin trouble.



Biological Agents

Dermatitis may be caused by bacteria, fungi, or parasites. Anthrax from handling hides, tularemia from handling skins, boils and hair follicle infections caused by *staphylococci* or *streptococci*, and general infection from occupational wounds are among the skin infections resulting from bacteria. Fungi cause athlete's foot and dermatitis among agricultural workers such as fruit handlers, wool handlers, and horticulturists. Parasites cause grain itch and ground itch among handlers of grains, straws, fruit and other horticultural activities.

In all of the above skin problems associated with biological agents, the use of proper protective clothing and individual hygiene is important. Infection originating in minor cuts or lesions is quite common. It may be that some workers acquire a sensitivity to biological agents living on the products they handle or are exposed to in their area of work. In some cases the worker may have to be transferred to another job because of his severe sensitivity to such a substance. Where possible, contact with the irritant should be eliminated by removal of the irritating substance.

General Hygienic Measures

Careful supervision of the personal cleanliness of workers exposed to skin irritants is essential to the prevention of dermatitis. Employees must be made knowledgeable of where, how and when to wash the skin and/or contaminated clothing in order to reduce prolonged contact of irritants with skin. For many types of exposure, washing alone is a successful preventive measure. In nearly all cases, the use of large quantities of water on the skin following exposure to irritants is good hygienic practice. Soaps can also cause irritation on certain types of skin; for example, many people

experience a skin reaction to the phosphate content of various soaps. In general, soap should:

- 1) be freely soluble in the water available
- 2) remove fats, oils, and other soil without harming skin
- 3) leave the natural oils on the skin
- 4) contain no harsh abrasives or irritants
- 5) stay insect free
- 6) retain its properties in use and storage.

Key points For Skin Protection

It is easier to prevent skin trouble than to cure it, so follow these recommendations:

- 1) Be on guard against possible skin irritants. Read and follow instructions on labels for proper handling of hazardous substances.
- 2) Do not let harmful substances touch your skin.
- 3) Practice cleanliness as the best protection. Wash off irritants contacting skin as soon as possible.
- 4) Wear clean protective clothing, suitable for the work. Clean or change clothing frequently as dirty or saturated clothing can cause skin troubles.
- 5) Use proper creams to protect skin from sunburn and other irritants as directed by a physician. Such creams should be applied only to skin that has been thoroughly cleansed.
- 6) Do not put medications on skin rashes unless directed by a physician.

¹ Bulletin S-137 Skin Trouble is Plenty Trouble. State of California Ag & Service Agency, Dept. of Ind. Rel., Div. of Industrial Safety. 1973.

² Telephone conversation, Oregon Dept. of Health.

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