

Safety Note #46

SKIN PROTECTION FROM ULTRAVIOLET RADIATION



Statistical data from the California Cancer Registry indicates approximately 5,000 people per year develop skin cancer in California. Moreover, about 700 Californians die from skin cancer annually. Information available from The Skin Cancer Foundation indicates exposure to ultraviolet (UV) radiation causes more than 90 percent of skin cancers and 80 percent of a person's lifetime exposure occurs before the age of 18. Also, it has been estimated that one severe childhood sunburn can double the risk for developing skin cancer later in life. Although anyone may develop skin cancer, the people at greatest risk are those with fair skin, blonde or red hair, green or blue eyes, and/or freckles. **Videos E-044 and S-044 Dermatitis and Skin Cancer are available from the ANR**

Environmental Health and Safety Library at <http://safety.ucanr.org>.

UV Radiation

- The broad spectrum of solar radiation (i.e., energy transmitted from the sun, including sunlight) encompasses radiation within UV wavelengths.
- UV radiation has relatively short wavelengths (100-400 nanometers [nm]) and is not visible to the human eye. Note: the thickness of a human hair is about 80,000 nm.
- The UV portion of solar radiation includes UVA, UVB, and UVC wavelengths.
- UVC and part of UVB radiation are absorbed by the earth's upper atmosphere.
- Overexposure to UVA and remaining UVB radiation can cause damage to the skin.

Skin Damage Attributed to Chronic Exposure to UV Radiation

1. Melanoma - a malignant tumor, usually colored brown or black, which develops in the skin cells (melanocytes) that produce the coloring pigment of skin, hair, and eyes. Considered the most serious form of skin cancer. Melanocytes are typically concentrated in moles.
2. Basal Cell Carcinoma – most common form of skin cancer. Originates at the bottom layer of the epidermis or outer skin layer. Characterized by open sore, reddish patch, or shiny bump on body parts most exposed to the sun.
3. Squamous Cell Carcinoma – originates in the upper layers of the skin (squamous cells). Tumors occur on body parts most exposed to the sun, including ear rims and lower lips.
4. Actinic Keratosis – crusty or scaly bumps, patches, or lesions that occur on skin surfaces most exposed to the sun. Considered to be a precursor to skin cancer.

Protecting Your Skin from UV Radiation

- Working outdoors exposes employees to UV radiation levels 20 times greater than those for employees working indoors.
- UV radiation exposure increases by about 10% with every 3,000 foot increase in elevation.
- The peak hours of UV radiation are between 10:00 am and 4:00 pm. So scheduling outdoor work outside these hours will reduce exposure to UV radiation.
- Always wear a hat with brim, long sleeve shirt, and long pants when working outdoors.
- Use a sunscreen with a skin protection factor (SPF) of 15 or greater on exposed skin areas.

If you detect a suspected dark-colored or irregular skin spot, promptly seek medical advice.