

Had Radiation? Protect Your Skin From the Sun!

Skin that has been exposed to radiation therapy can be more sensitive to the sun's UV rays.

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When it finally starts to get warm in Seattle, we're often tempted to go outside and soak up the rays — but let's be safe about it.

[Skin cancer](#), which is primarily caused by your cells' exposure to ultraviolet (UV) rays, is the most common type of cancer worldwide. Skin cancer diagnoses are on the rise. One in five Americans will develop skin cancer before the age of 70, according to the [Skin Cancer Foundation](#).

How does the sun damage your skin?

The sun emits three types of UV rays that have differing wavelengths: UVA, UVB and UVC. Both UVA and UVB rays penetrate the skin and damage the DNA within the cells, causing mutations. This can eventually lead to uncontrolled cell growth, which can lead to cancer over time. UVC rays rarely reach the surface of the Earth, but non-solar UVC ray exposure (from sources such as germicidal/disinfection lamps, UV sterilization devices, and some lasers and scientific equipment) can potentially also lead to skin cancer.

What are the types of skin cancer?

There are several types of skin cancer. Melanoma is the most serious because it spreads easily to other parts of the body.

- [Basal cell carcinoma](#) is usually found on sun-exposed areas of the body and affects the basal layer of the skin. It grows slowly and rarely spreads.
- [Squamous cell carcinoma](#) affects the middle layer of the skin and often appears in areas

exposed to the sun. It can arise from a precancerous condition called actinic keratosis and is relatively slow-growing but more aggressive than basal cell skin cancer.

- [Merkel cell carcinoma](#) is a more aggressive but rare form of skin cancer. It arises in Merkel cells, which are cells in your skin that act as touch receptors and relay touch-related information to your brain.
- [Melanoma](#) is a cancer that begins in melanocytes — the cells that make melanin, which color your skin and eyes. Melanoma is an aggressive type of cancer and can arise even in areas that are not usually exposed to the sun, such as the soles of your feet. It can also arise in the eyes, called ocular melanoma, and mucus membranes, called mucosal melanoma.

What are the risk factors for skin cancer?

People who have fair skin, freckles or many moles and light hair and eyes are at higher genetic risk for developing skin cancers. However, people with darker skin can also get skin cancer, despite increased levels of melanin in the skin, which can act like a natural sunscreen. If you have a relative who developed skin cancer, your risk is also higher.

The biggest environmental risk factor is exposure to the sun (or other UV rays such as in a tanning bed), especially if you have had several blistering sunburns in your youth, you burn easily or live or work in tropical latitudes or at high altitudes. You are at considerably higher risk if you use or have used tanning beds — according to a [recent study](#), the risk can be three times higher.

Your skin is more sensitive to UV rays if you've been treated for skin cancer in the past or received radiation therapy, your immune system is weakened, or you are taking medications that increase your sun sensitivity.

Why is radiated skin sensitive to the sun?

Radiation therapy, including proton therapy, doesn't just kill cancer cells; it also damages healthy skin cells. This can make it harder for the cells to produce melanin, sweat and oils, which are the skin's natural defense mechanisms. When skin cells are weakened, they are more prone to sunburn and skin cancer. The sun often causes dermatitis (called photodermatitis) in these areas, a condition that can cause irritation, blistering, dryness, flaking or oozing of the skin. Skin that has received radiation will be more sensitive to the sun forever. The sun can also cause skin

discoloration and more prominent blood vessels in areas that have received radiation.

“Immediately following completion of radiation therapy, we recommend that patients moisturize their skin but eventually discontinue topical steroids,” said Fred Hutch nurse Sunshine Gray, MSN, RN.

“Long-term use of topical steroids can cause further skin damage, including skin thinning, dilated blood vessels, stretch marks and discoloration, and can also trigger acne and increase vulnerability to infections,” she said.

Continued daily moisturizing for up to six months following treatment promotes gentle self-massage that can help reduce the chance of developing stiffness and fibrosis and increase blood supply to the area to enhance healing. Oncologists generally recommend simple, gentle moisturizers that are fragrance-, dye- and alcohol-free. Talk with your oncologist to determine the best option for you and your skin type.

“Forevermore, we recommend that patients use sunscreen with SPF 30 or higher or a physical barrier such as a hat and long-sleeved clothing — or both — over the treated area because of the slightly increased risk imposed by the radiation with regard to sun sensitivity,” Gray said.

Reminders for patients who have had radiation therapy:

Radiation therapy permanently alters the structure of your skin, making it more vulnerable to sun damage. It is important to always use sunscreen and other preventive methods outlined in this article. In addition, moisturize your skin daily and monitor for new or changed moles, changes in skin sensation, resistance to healing and changes in texture.

Perform a regular skin self-exam as part of your skin cancer prevention and early detection plan and see a dermatologist twice a year, especially if you have received radiation, including proton therapy. (Skin self-exams are also important for everyone, not just patients who have had cancer treatment.) Learn how to do an exam and what to look for on Fred Hutch’s skin cancer pages.

How can skin cancer risk be reduced?

Because skin damage accumulates over the years, it’s best to start protecting your skin right away — the earlier, the better. The best ways to reduce your risk:

- Limit the amount of time you are in the sun, especially between 10 a.m. and 4 p.m. This is when the sun’s UV rays are strongest. Stay indoors or in the shade.

- Wear sunglasses with UV protection or a hat with a visor to protect your eyes.
- Wear a broad-brimmed hat that shades your face, ears and neck.
- Wear clothes with an ultraviolet protection factor (UPF) rating of 50 or higher during outdoor activities or at least long-sleeved shirts and bottoms that cover your legs.
- Use sunscreen. Most sunburns can be prevented by using sunscreen with a sun protection factor (SPF) of 30 or higher. SPF tells you how long your skin can be exposed to the sun and maintain a low risk for sunburn. The higher the SPF number, the longer it protects you from burning rays, so a higher SPF is better. However, you should reapply at least every couple of hours, more often if you burn easily. One and done is not enough!

The Skin Cancer Foundation has created the “5 Ws” of general sunscreen use:

- Who: Everyone under the sun
- What: Broad spectrum SPF 15 or higher; SPF 30 or higher for a day outdoors
- When: Every day; 30 minutes prior to going outdoors. Reapply every two hours
- Where: All exposed skin
- Why: Reduce your risk of skin damage and skin cancer
- How: One ounce (shot glass full) to the entire body for each application – an 8-ounce tube should last only a day or two when you spend all day outdoors!

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