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Sun Safety

There are a number of effective ways to prevent sunburn, including staying out of the sun during peak hours, sunscreen, and protective clothing. While these measures are important for everyone, they are especially important for children and people with fair skin, who burn easily and tan poorly.

Avoid Sun Exposure

It is important to prepare for sun exposure, especially if you plan to be out in the sun for an extended period of time or during the middle of the day, when the sun's rays are strongest (10:00 AM to 4:00 PM).

Even on cloudy days, it is important to protect your skin because ultraviolet (UV) radiation can pass through the clouds and cause sunburn. In addition, UV rays reflect off surfaces like sand, snow, and cement. Snow can have up to 30 percent reflectance and cause severe sunburn without protection. The sun's rays can also penetrate clear water. Using two types of protection (shade or clothing plus sunscreen) is the best way to reduce sun exposure and the risk of sunburn and skin cancer.

Sunscreen

The active ingredients of sunscreens can be minerals (eg, titanium oxide or zinc oxide) that provide a physical barrier to ultraviolet (UV) radiation, or organic chemicals that absorb UV rays. Sunscreen formulations (gels, lotions, and sprays) typically contain several active ingredients and, often, a mix of physical and chemical agents.

The sun protection factor (SPF) is primarily an indicator of how much protection the sunscreen offers against ultraviolet B (UVB; sunburn) rays. You should look for a sunscreen that is labeled as broad-spectrum, meaning it protects against both ultraviolet A (UVA) and UVB rays. However, most people do not apply enough

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sunscreen to achieve the SPF on the label and can overestimate their level of protection. Applying the sunscreen twice is a good way to achieve better protection.

What SPF is best? Most health care providers, as well as the American Academy of Dermatology, recommend the following:

- Use a sunscreen with an SPF of 30 to 50 on exposed skin, depending on the weather.
- Use a sunscreen that protects against both UVA and UVB radiation.
- You should not use a high SPF just to stay out longer in the sunshine. If you anticipate intense and/or prolonged sun exposure (eg, while at the beach or skiing), you should use a high SPF sunscreen and reapply it frequently.

How much sunscreen do I need? You should apply sunscreen generously to all exposed skin 20 minutes before exposure. Exposed skin is any skin that is not protected from the sun.

Good application is needed to achieve the labeled SPF. One approach is the "teaspoon rule," which means a generous teaspoon of sunscreen to each leg, the front and back torso, and a generous half-teaspoon to each arm, face, and neck. Applying less than this amount may reduce the sunscreen's SPF rating.

You should reapply sunscreen after sweating, rubbing the skin, drying off with a towel, or swimming. The traditional advice is to reapply sunscreen every two to three hours. However, some evidence suggests that reapplying sunscreen as soon as 20 minutes after going outside may offer greater protection, allowing you to completely cover areas that you might have missed when you first applied sunscreen. You should then reapply every two to three hours.

Protect your lips with lip balm containing a SPF of 30 or higher and reapply frequently. Some cosmetic products (eg, liquid foundation, lipstick) and moisturizers contain sun-protective ingredients, although to be truly effective, these products should be labeled as having an SPF of 15 or higher. Many of these products provide little or no UVA protection.

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Sunscreen and Vitamin D: Although UV radiation has many deleterious consequences, wavelengths within the UVB spectrum have the beneficial effect of triggering the production of vitamin D by the skin. This is the main source of vitamin D, which is essential for good bone health. Some studies have shown that although sunscreens protect against UVB, they still allow very good vitamin D synthesis because the UVB dose for this is much lower than the dose for sunburn. Thus, the benefit of sunscreen use against sunburn and skin cancer is not compromised by any significant effects on vitamin D production.

Does Sunscreen Expire? Manufacturers recommend throwing away sunscreen when it has passed the expiration date listed on the bottle; however, sunscreens can last longer than their recommended date. Use common sense to assess; if the sunscreen doesn't smell correct or if the consistency is not right, then discard. For sunscreen that does not have an expiration date, a typical recommendation is to replace it every season. Expired sunscreen may be less effective, potentially reducing the SPF rating and increasing your risk of sunburn.

Clothing: In addition to sunscreen, consider covering exposed skin with a wide-brimmed hat, long-sleeved shirt, and long pants. A hat made of tightly woven material (eg, canvas) can provide shade for the face, ears, and back of the neck. Sunglasses that provide 100 percent UV ray protection can reduce your risk of cataracts (clouding in the eye's lens); wraparound glasses provide the most complete protection.

Clothing made from tightly woven dark fabrics tends to provide greater protection than light-colored fabrics. Some manufacturers have sun-protective clothing with SPF. In addition, UV absorbing agents can be applied to clothing in the laundry.

Tips for Children: Children are at higher risk than adults for becoming sunburned for several reasons. Children are usually unaware of the risks of sunburn and are less likely to use preventive measures (eg, sunscreen, shade). Children may also be more sensitive to the sun, resulting in more DNA damage in response to the same amount of sunshine as adults. Thus, regular sunscreen application is imperative for

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children. Baby formulas are recommended, as these are more likely to contain physical blockers (eg, titanium dioxide or zinc oxide) that are thought to be safer.

Babies under six months should be kept out of direct sunlight, and sunscreen can be applied to any exposed areas of the skin (eg, face and back of hands). The safety of sunscreen has not been tested in infants younger than six months; thus, parents are encouraged to use hats, sunglasses, and shade to protect children from the sun.

Sun Tanning

People with naturally brown or black skin have a high level of the pigment melanin in their skin, which provides protection against sunburn and skin cancer. If your skin is light, tanning increases your skin's production of melanin, which can provide limited protection to the skin against further damage from ultraviolet (UV) radiation. However, the small benefit of tanning (protection from sunburn) does not outweigh the risks (skin cancer, aged skin).

Outdoor tanning: A tan is a response to DNA damage in the skin that, if unrepaired, can lead to skin cancer. Tanning also increases the long-term consequences of sun exposure, such as skin cancer and wrinkling.

Tanning beds: Most tanning beds emit UV radiation, primarily in the ultraviolet A (UVA) range. Although both UVA and ultraviolet B (UVB) can cause tanning, UVB-induced tans last a little longer. There are reports that it may protect you from further sunburn by only an SPF of 2 to 4. However, it is important to note that tanning beds can cause sunburn and have been linked to an increased risk of melanoma, a potentially deadly form of skin cancer.

The use of commercial tanning lamps is banned in Australia and Brazil, and legislation is in place in the United Kingdom, particularly for those with fairer skin types. In the United States, indoor tanning is banned for those under 18 in several states. Tanning beds should not be used by people under the age of 18 years and with exposure restrictions. For those who do use tanning beds, it is particularly

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important to use protective eyewear when the sunlamp is on because tanning beds can cause cataracts and melanoma of the eye.

Sunless tanning: As people become more aware of the risks of skin cancer from sun exposure and tanning beds, sunless tanning products have become increasingly popular. A variety of safe and natural-appearing sunless tanning products are available, including lotions, gels, and sprays.

Other tanning products — No tanning pills or tanning accelerators taken by mouth have been approved by the US Food and Drug Administration (FDA). These are marketed to darken the skin by either stimulating the body's pigmentation system or distributing the color additives within the skin. However, their safety is questionable and use is not advised.