

## Sunscreen and Sun Exposure

### Medical and Surgical Oncology

#### Ultraviolet Rays

Two types of ultraviolet (UV) light, UVA and UVB, make up the sun's rays. These rays are invisible but cause the skin to tan, burn and become damaged.

UVA rays are the weakest. They make up most of the UV light that reaches the Earth. UVA rays reach deeper into the skin, causing aging, wrinkles and skin cancer. UVA rays can weaken the skin's immune cells, making the body less able to fight infection and disease.

UVB rays are stronger and more harmful, but less of them reach the Earth. UVB rays affect the outer layers of skin, causing aging, sun burn and skin cancer.

Even though UV light affects the body, you can't see or feel it. The amount of UV light outside may be high even on a cloudy or cool day.

#### Stay Out of the Sun

Staying out of the sun is the best way to reduce the risk of skin cancer, including melanoma. Make sure to:

- Stay indoors and avoid the sun as much as possible, especially from 10 a.m. to 4 p.m. This reduces UVB exposure by 60 percent.
- Seek the shade if you must be outside.
- Get no more than one to three hours of exposure at mid-day.

#### Slip! Slop! Slap!

Slip on a shirt. Choose clothes that do not allow light to pass through. Dark clothes are better because they absorb more harmful UV light. Blue jeans, for example, are very protective.

Slop on sunscreen. See the next section below about which sunscreen to choose.

Slap on a hat. Wear a three-inch brimmed hat.

Seek shade. If you must be outside for a long period of time seek shade.

Slide on a wrap. Large, wrap-around sunglasses are best to provide the optimal amount of protection.

#### Sunscreen Tips

Sun protection factor or SPF is a rating for the strength of a sunscreen. The higher the number, the better the protection offered. An SPF of 30 or higher is recommended. SPF 30 means that it extends your safe UVB exposure up to 30 times. For example, if you usually burn in 10 minutes, an SPF 30 sunscreen should protect you 30 times longer, which would be for five hours.

It is risky, though, to think of sunscreen this way because every day is different, the effectiveness depends on how it is applied and most will begin to wear off within a couple of hours, especially if you are active outdoors (i.e. biking, swimming, playing sports). Therefore, it's best to follow these guidelines:

- When applying sunscreen, use a generous handful. Start with one ounce, which is about the size of a shot glass. Use a full tablespoon on your face. Applying sunscreen thinly or unevenly can make it less effective, up to one-quarter to one-half of the SPF rating.
- Be aware that sunscreen may encourage you to stay out in the sun longer than is healthy, increasing your total sun exposure. While you may not be sunburned, your body might still be absorbing dangerous UV rays.
- Reapply sunscreen every two hours and after vigorous exercise or swimming. (Even if it is a waterproof sunscreen, some of it might rub or towel off.)
- Beware of cool days because the UV exposure risk is the same. Even on cloudy days, you still have a 10 to 50 percent risk of UV exposure. Also, reflective surfaces, such as water, sand, snow and concrete, can expose you to UV rays. Under an umbrella on the beach, 50 to 60 percent of the sun's UV rays reflect off the sand onto you.
- Around the eyes, try applying a lip balm containing sunscreen or use a physical sunscreen.
- Check expiration dates. Do not use expired sunscreen.

### **Types of Sunscreen**

Sunscreen provides either physical or chemical protection from the sun's rays. Physical sunscreen contains mineral particles, such as zinc oxide and titanium dioxide, which reflect or scatter UV light. Chemical sunscreen, such as salicylate, cinnamate and benzophenone, absorb UV light. If you have sensitive skin, then physical sunscreen may be less irritating to you.

### **Sunscreen Recommendations**

Please see below for examples of sunscreen recommended by nonprofit consumer groups. All are SPF 30 or higher and block both UVB and UVA rays. Also, keep in mind that the products and their names change often.

*Consumer Reports* recommends the following top seven (2014) sunscreens:

1. Banana Boat's Ultra Defense Max Skin Protect SPF 110 spray.
2. Bull Frog Water Armor Sport InstaCool SPF 50+ spray.
3. Coppertone Water Babies SPF 50.
4. Neutrogena Ultimate Sport SPF 70+ lotion.
5. Target's Up & Up Spray Sport SPF 50 spray.
6. Walgreens' Well Sport SPF 50 spray.
7. Walmart's Equate Ultra Protection SPF 50.

(MD Anderson Cancer Center at Cooper does not endorse any of these products.)

### **Is Sunscreen Safe?**

Zinc oxide and titanium dioxide are now in many sunscreens as nanoparticles. Nanoparticles are tiny and cannot be seen with the naked eye. Products using these agents are probably safe because they are only absorbed into the top layer of skin.

Benzophenone-3 (BP-3 or oxybenzone) is used in many sunscreens and lip balms. This agent can mimic the effects of the "female" hormone estrogen. No effects in humans have been reported, however, it may be wise to limit exposure to this agent in young children. See [www.ewg.org](http://www.ewg.org) for a list of sunscreens that don't contain BP-3. (Usually those with zinc oxide or titanium dioxide do not have BP-3.)

### **Sun-Protective Products and Clothing**

You also might want to consider special sun-protective hats, clothing or other products, such as:

- SunGuard™ laundry additive ([www.sunguardsunprotection.com](http://www.sunguardsunprotection.com))
- Coolibar ([www.coolibar.com](http://www.coolibar.com))
- Sun Precautions ([www.sunprecautions.com](http://www.sunprecautions.com))
- Cabana Life ([www.cabanalife.com](http://www.cabanalife.com))

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