

Sunscreen: Answers to your burning questions

Know how to select and apply a good sunscreen to protect your skin from sunburn and other skin damage.

By Mayo Clinic staff

If you're like most people, you enjoy spending time outdoors and feeling the heat of the sun on your skin. But not all the sun's rays are pleasing. Ultraviolet (UV) light — invisible, but intense rays from the sun — can damage your skin and increase your risk of skin cancer.

Though it's not the only safeguard you need to take, sunscreen is one of the easiest ways to protect your skin and is a good first line of defense.

Here's how you can get the most protection from your sunscreen.

How do sunscreens work?

Sunscreen absorbs, reflects or scatters UV light. It's divided into three wavelength bands — ultraviolet A (UVA), ultraviolet B (UVB) and ultraviolet C (UVC). Only UVA and UVB rays reach the earth.

Sunscreens provide either physical or chemical protection from UV light.

- **Physical sunscreens** form an opaque film that reflects or scatters UV light before it can penetrate the skin. These sunscreens contain ingredients, such as zinc oxide and titanium dioxide, which protect against both UVA and UVB rays. Original formulations of physical sunscreens remained white when applied to the skin. Newer formulations blend more with your skin tone and are less noticeable.
- **Chemical sunscreens** absorb UV rays before they can cause any damage. They contain one or more ingredients, such as avobenzone or oxybenzone, which absorb UVA or UVB rays. For broad protection, chemical sunscreens often contain more than one ingredient to protect against both UVA and UVB rays. A newer over-the-counter sunscreen contains mexoryl (Anthelios SX) and offers protection against both UVA and UVB radiation.

Who should use sunscreen?

If you spend time outdoors during daylight hours, you need to use sunscreen even if you have darker skin pigment, tan easily and can tolerate longer periods of sun exposure without burning. Regardless of skin type, the sun's energy penetrates deeply into the skin and damages DNA of skin cells. This damage may ultimately lead to skin cancer.

Children are especially susceptible to the harmful effects of the sun, so take extra steps to protect their skin and to prevent sunburns. Babies younger than 6 months should be kept out of direct sunlight because their skin is even more fragile. Use sunscreen on an infant only if you're unable to keep him or her out of the sun and are unable to cover exposed skin. Use a small amount on uncovered areas, such as on hands or ears, and check for any skin reactions.

What is an SPF?

All sunscreens products include an SPF, which stands for sun protection factor. The SPF number is a measurement of the amount of UVB protection — the higher the number, the greater the protection. Currently, there's no standard rating system that measures UVA protection.

SPF is not an indication of how much time you can spend in the sun. For example, if you use a sunscreen with an SPF 30 rather than one with an SPF 15, it doesn't mean you can stay in the sun twice as long. In reality, an SPF of 15 filters out about 93 percent of the UVB rays; SPF 30 filters about 97 percent of UVB rays. The beneficial effects of sunscreen decreases over time, so after a few hours the difference between the two may be even less.

Don't rely on the SPF factor to decide how long you're safe in the sun. And don't count on your skin to tell you when you've had too much sun. It may take up to 24 hours for a sunburn to develop fully.

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What reduces the effectiveness of sunscreen?

How much protection your sunscreen offers depends on many factors, including how likely your skin is to burn (your skin type), the amount and type of sunscreen used, how often the sunscreen is applied, and how intense the UV rays are.

In addition, many factors can make sunscreen less effective. These include:

- High humidity
- Sweating
- Drying or rubbing your skin with a towel
- Swimming, showers or other contact with water

What should you look for when buying sunscreen?

Not all sunscreens are the same. Be sure to:

- **Select a broad-spectrum sunscreen with an SPF of at least 15.** Broad-spectrum products provide protection against both UVA and UVB radiation. Look on the ingredient labels for oxybenzone, sulisobenzene, avobenzone (Parsol 1789), ecamsule, titanium dioxide or zinc oxide.
- **Watch for added ingredients that may irritate your skin.** Some sunscreens contain fragrances, preservatives and other ingredients that cause skin reactions in some people. If you have sensitive skin, look for sunscreen that doesn't contain potential allergens, such as fragrances or dyes, and is specifically designed for your type of skin.
- **Understand labels.** Look for sunscreens labeled "water resistant," which offers some protection against washing off in water or when perspiring heavily. Sunscreens can no longer be labeled "waterproof" because all sunscreens wash off to some extent. Other terms that can no longer be used on sunscreen product labels include "sun block" (no product actually blocks all UV rays) and "all-day" (no sunscreen lasts all day).
- **Make sure any product you use actually contains sunscreen.** Many tanning oils and lotions don't. Products that don't contain sunscreen are required by law to clearly indicate that on the label.

How much sunscreen is necessary, and how often should it be applied?

Most people use sunscreen too sparingly. A liberal application is 1 ounce (29 milliliters) — the amount in a shot glass — to cover all exposed parts of the body. If you have a 4-

ounce (118-milliliter) bottle, you'll be using about one-fourth of it for one application. Be sure to rub the sunscreen in well.

To maximize protection, apply sunscreen liberally 30 minutes before going outdoors and reapply every two hours, or sooner as needed.

Is sunscreen enough to protect your skin?

Though it offers some protection, no sunscreen blocks out all of the UV rays. Therefore, sunscreen shouldn't replace other protective measures, such as limiting the time you spend in the sun and covering your skin. For the most complete sun protection, use all three of these methods:

- **Avoid the sun between 10 a.m. and 4 p.m.** Because the sun's rays are strongest during these hours, try to schedule outdoor activities for other times of the day. Seek shade whenever possible. If you're unable to avoid being in the sun, limit the amount of time you're outdoors during these peak hours.
- **Cover up.** Wear tightly woven clothing that covers your arms and legs and a broad-brimmed hat, which provides more protection than does a baseball cap or golf visor. Also, consider wearing clothing or outdoor gear specially designed to provide sun protection.
- **Use sunscreen frequently and liberally.** Apply sunscreen liberally 30 minutes before going outdoors and reapply about every two hours. Use it even on cloudy or hazy days. UV rays can penetrate cloud cover.