



Employee FAQ: Sunscreen

What is sunscreen?

Sunscreen is a preparation with a Sun Protection Factor (SPF) of 15 or more that is used to protect the skin from the damaging ultraviolet rays (UV) of the sun. Sunscreen testing and labelling is regulated by the U.S. Food and Drug Administration (FDA). The active ingredients in sunscreen absorb, reflect, or scatter the harmful UVA and/or UVB rays of the sun in varying amounts. Forms of sunscreen addressed by the FDA guidance include oils, lotions, creams, gels, butters, pastes, ointments, sticks, and sprays.

How does sunscreen work?

Sunscreen ingredients are classified as either “chemical” or “physical” based on how they perform on the skin. Chemical sunscreen ingredients are absorbed into the skin and work by absorbing UV (like a sponge). Physical sunscreen ingredients lie on top of the skin and work by reflecting or scattering UV (like foil). Many sunscreen products contain a combination of chemical and physical sunscreen ingredients to make them more effective.

Is sunscreen a good sun protection method?

Sunscreen, when used correctly, can be an effective means of sun protection. For example, a study published in the Journal of Clinical Oncology in 2010 found that daily use of sunscreen may reduce the risk of melanoma by half. However, sunscreen should not be the first or only defense against UV. Ideally, sunscreen should be used in addition to shade and protective clothing. Also, it should be used to protect against normal sun exposure, not to usually prolong time in the sun, because no sunscreen can block 100% of harmful UV rays.

What is SPF?

SPF is basically a measure of how long a sunscreen will protect the user from UVB rays and prevent sunburn. SPF is not a measure of UVA protection (see broad spectrum question). SPF tells a person how long the sunscreen will protect the skin from a sunburn. SPF is based on how long it normally takes a person’s skin to redden, without the sunscreen and the SPF of the product (see next question).

How is SPF calculated?

An SPF 15 means that 1/15 of UVB will reach the skin. One divided by 15 equals 7% of UVB getting through to the skin (and 93% being screened). So an SPF 15 screens 93% of UVB. That’s the sunscreen’s strength of protection. If someone’s fair skin typically begins to redden when outside for 10 minutes in the sun without sunscreen, then an SPF 15 will prevent the skin from sunburn 15 times longer (10 minutes x SPF 15 = 150 minutes, or 2.5 hours). An SPF 30 would protect that person for 5 hours. An SPF 50 for 8 hours. Of course, sunscreen needs to be reapplied to work all day when it might sweat off, rub off, deactivate, etc.

Are higher SPFs better?

Higher SPF numbers provide longer protection and stronger protection, but only up to a point. It seems that if a SPF 15 provides 93% protection that a SPF 30 should provide twice as much – but it doesn’t work that way. An SPF 30 provides 4% more protection - 97% - than SPF 15. A SPF 50 provides 98% protection and a SPF 100 provides 99%. No sunscreen blocks 100% of UVB or UVA rays. One thing that often increases as SPF increases is the price of a sunscreen product. In the future, the FDA might cap SPF at 50 or 60 because the protection provided by higher SPFs is small and the price can be high.

What does broad spectrum mean?

Broad spectrum means that the sunscreen does more than prevent sunburn by protecting from UVB rays. It also screens some UA rays that can cause skin aging and skin cancer. Currently, the term “broad spectrum” indicates that the sunscreen screens UVA rays, but it does not indicate exactly how much.

What SPF should people who work outdoors use?

It is recommended that people who work outdoors choose sunscreen with an SPF 30 or more. Lower SPFs may not provide adequate protection for several hours outdoors.

Does sunscreen expire?

Sunscreens expire in three years. Sunscreens do not have to have an expiration date on them. If unsure about how old a product is, it may be best to buy a new one (and write the date on it). Shake sunscreen before use and if it still feels gritty or watery, the contents have likely separated and it should be replaced.

Is sunscreen harmed by extreme temperature?

Heat and humidity can breakdown sunscreen. To take sunscreen on the job or in a vehicle, try to protect it from very hot temperatures – like you would your lunch. Keep sunscreen in a cooler or duffel bag out of direct sunlight.

Do older adults need sunscreen?

Adults can get a lot of sun exposure. We get only about 25% of our lifetime sun exposure in childhood and older adults still get a lot of sun. Being in the sun over age 50 can be particularly risky because the body's ability to repair cell damage caused by UV decreases with age. Also, the immune system weakens with age. These factors make older people more likely to develop skin cancer.

Does expensive sunscreen work better?

Sunscreen does not have to be expensive to work well. In 2019, Consumer Reports tested lotions ranging from under \$1/ounce to over \$12/ounce and some of the best performers cost only \$1/ounce or less. For example, Walmart Equate Ultra Lotion SPF 50 ranked #4 of 48 lotions tested and costs less than \$0.50/ounce. Four other lotions in the top 12 from Coppertone, Walgreens, Solimo, and Hawaiian Tropic cost \$1/ounce or less.

What is water-resistant sunscreen?

This term is an FDA standard and means that a sunscreen retains its SPF value after swimming or sweating for 40 or 80 minutes as labeled. No sunscreen is water-proof or sweat-proof.

What is natural sunscreen?

Natural sunscreens only use titanium dioxide, zinc oxide, or both as active ingredients. Both titanium dioxide and zinc oxide are naturally occurring minerals that work to reflect some UVA and UVB radiation to help prevent it from being absorbed into the skin. Testing by Consumer Reports consistently finds that these physical UV filters (also called organic or mineral sunscreens) do not perform as well as chemical sunscreen ingredients. The FDA considers these physical sunscreens safe and effective. Physical sunscreens are recommended for sensitive skin.

Do sunscreens “block” UVA and UVB?

No sunscreen lasts all day or blocks 100% of the sun's harmful UV rays. Sunscreen provides protection for a limited amount of time; usually the number of minutes it takes a person's skin to redden multiplied by the SPF of the product they are using. All sunscreens screen some UVB—the burning rays. And all broad-spectrum sunscreens screen some UVA—the aging rays that penetrate more deeply into the skin. But some UV rays are still getting through, which can add up.

Is spray sunscreen effective?

Spray sunscreen can be convenient, safe, and effective with a little extra effort. For example, it is very important to not spray sunscreen near the face because inhaling it can irritate the lungs. Instead, spray the sunscreen on your hands and rub it on your face and other exposed skin. Rub the sunscreen on so you don't miss any spots and have even coverage. Don't use spray sunscreen on a windy day as it is easier to inhale it and it often blows away rather than lands on the skin. Also, spray sunscreen contains alcohol, which is flammable. Don't use it near an open flame or you could be burned.

Are sunscreen wipes effective?

There is not enough data for the FDA to recommend wipes or towelettes as an effective sunscreen application device. It can be hard to tell when a wipe or towelette is out of sunscreen, so adequate coverage can be tricky.

Are sunscreen insect repellents effective?

The FDA has proposed not accepting products that combine sunscreen with insect repellents as safe and effective. Sunscreen needs to be reapplied during the day, while DEET, and insect repellent, does not. These products should be used separately. Apply sunscreen first before applying the insect repellent.

What about lip balm?

Lips can be very susceptible to sunburn and skin cancer. Fortunately, there is a special sunscreen preparation just for lips – lip balm with SPF 15 or more.

How much sunscreen needs to be applied?

The recommendation for adults is one teaspoon per exposed body part (head/neck, arm, back, etc.). That's an amount about the size of a golf ball for a whole body. People commonly underapply sunscreen by 50%, making an SPF 30 more like a 15. To keep it simple, use a lot - more than you think you need.

When should sunscreen be applied?

Apply chemical sunscreens 15 to 30 minutes before going outside to give them time to work. Physical sunscreens (titanium dioxide and zinc oxide) work right away.

How often does sunscreen need to be reapplied?

Once sunscreen is on the skin it begins to wear down so it needs to be reapplied. Reapplying sunscreen every two hours during daylight hours is recommended, particularly between peak UV hours of 10:00 am to 4:00 pm, and especially after sweating. If it's hard to reapply sunscreen on the job, even one reapplication at a midday break will help.

Is sunscreen safe for humans?

Some sunscreen ingredients, such as octinoxate and oxybenzone, have been found to cause hormonal changes in animals and to be absorbed into the blood stream. Studies in humans have not shown an adverse effect of these chemicals. Research is ongoing and this may change. Another concern is that sunscreen can give users a false sense of security: They may think they have more protection than they actually do and stay out in the sun longer than they should or normally would – increasing UV exposure.

Is sunscreen dangerous for the environment?

Octinoxate and oxybenzone may be harmful to aquatic life, such as coral reefs. Some coastal areas, like Hawaii, and Key West, Florida, are planning to ban sunscreens with these chemicals beginning in 2021.

Which sunscreens are recommended for effectiveness?

Consumer Reports tests several sunscreen products for effectiveness and value every year. In their 2020 Sunscreen Buying Guide they tested over 50 sunscreen lotions, sprays, and lip balms. Tests found that many of the products had less than half their labeled SPF number. That does not mean the products are not protective at all, but you might not be getting the protection you think you are. Testing also finds that physical/mineral UV filters (titanium dioxide and zinc oxide) do not perform as well as chemical sunscreen ingredients. For effectiveness, Consumer Reports recommends choosing a chemical sunscreen – one with an SPF 40 or more to increase the chances of getting an SPF 30 upon application.

Does sunscreen alone provide the best sun protection?

Use sunscreen along with shade, long sleeves, long pants, wide-brimmed hats, and sunglasses. Research shows that people who rely on sunscreens alone tend to burn more than people who cover up and use shade.