

What doctors want patients to know about sunburns

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AT A GLANCE: Sunburns are painful skin injuries caused by ultraviolet radiation, making prevention and treatment vital for protecting skin health. Here are key things you will learn about sunburns in this article.

- Sunburns, which are an inflammatory response, are very common and are caused by excessive ultraviolet (UV) exposure with symptoms of sunburns depending on degree of severity.
- The approval of bemotrizinol as an ingredient in sunscreens offers improved skin protection with minimal systemic absorption.
- Various factors can influence your risk for sunburns, including skin tone, geographic location and time of sun exposure.
- Repeated sunburn can induce wrinkles, dark spots, dyspigmentation or potentially DNA damage and mutations that can develop into future skin cancers.
- For sunburn prevention, it's important to reapply your sunscreen every two hours while outside.

How bad can a sunburn really be? It might seem like a temporary summer nuisance—red skin, stinging pain, maybe a few days of peeling—but doctors say sunburn is a visible sign of skin damage that can carry long-term consequences. Whether it happens after a beach day, a ballgame or a quick afternoon in the yard, even one bad sunburn can increase the risk of future skin problems.

The good news: Most sunburns are preventable, and mild cases can often be treated at home with the right steps. Knowing how to protect your skin with shade, clothing and sunscreen, how to cool and soothe a burn once it happens, the difference between a burn

and sun poisoning, and when symptoms need medical attention can help patients stay safer in the sun all year long.

The AMA's What Doctors Want Patients to Know™ series gives physicians a platform to share what they want patients to understand about today's healthcare headlines.

In this installment, Tara E. Avery, MD, a dermatologist with Geisinger, took time to discuss what patients should know about treating and preventing sunburns.

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A sunburn is an inflammatory response

We've all experienced a sunburn at some point in our lives. But what is a sunburn? According to Dr. Avery, "a sunburn is an inflammatory response to epidermal damage caused by excessive ultraviolet, or UV, exposure."



Tara E. Avery, MD

"In simpler terms," she said, a sunburn "is skin injury and inflammation from too much sun."

But sunburns don't just happen from spending the day at the beach, lake or pool. Sunburns can develop from doing everyday things without using sunscreen such as taking a walk

outside, gardening, going for a bike ride, exploring a fair or festival, or any other activity outside.

Sunburns are very common

“Sunburns are, unfortunately, very common,” said Dr. Avery, “especially at the start of sunnier months or following vacations to tropical areas closer to the equator.”

In fact, more than one-third of adults experience at least one sunburn a year. Rates are even higher among young adults and adolescents. Nearly half of 18–24-year-olds and up to 75% of adolescents report sunburns.

Additionally, according to the Centers for Disease Control and Prevention (CDC), more than 88 million adults in the U.S. get sunburned annually. Meanwhile, more than 18 million experience sunburns four or more times. For children and teenagers, between 50% and 75% experience at least one sunburn each year.

In the U.S., over 33,000 sunburns per year are severe enough to require a visit to the emergency department.

Eyes and lips can get sunburned

“You can get sunburns involving the lips and eyes,” said Dr. Avery, noting that “the skin at these sites is very delicate and needs protection from the sun too.”

In fact, your bottom lip is up to 12 times more likely than your upper lip to get sunburned. This is because of its constant exposure to sun.

Symptoms of sunburn on your lips are similar to other parts of your body. Sunburned lips can be red and painful, tender to touch, swollen, blistered, and dry, cracked or peeling. To protect your lips from sunburn, apply and frequently reapply a lip balm with an SPF of 30 or higher, seek shade during peak UV hours and avoid glossy lip oils or stains that can magnify sun damage. A wide brimmed hat can also help protect your lips from sunburn.

Meanwhile, sunburned eyes, also known as photokeratitis, are a painful condition caused by overexposure to UV rays. Symptoms of sunburned eyes include extreme light sensitivity, eye pain, redness, excessive tearing and a gritty feeling. The good news is that an eye sunburn typically resolves on its own within 24 to 72 hours.

To protect your eyes from sunburn, choose sunglasses that provide 100% UV or UV400 protection, or block both UVA and UVB rays, according to the American Academy of Ophthalmology. Wearing UV-blocking sunglasses can help you enjoy summer safely while lowering your risk for eye complications and diseases. You can also protect your eyes by wearing a hat with your sunglasses and never looking directly at the sun. Also, avoid tanning beds because they pose the same risks to your eyes and body as outdoor UV light.

Symptoms of sunburn range based on degree

When it comes to sunburns, said Dr. Avery, “you can have a mild first-degree sunburn, moderate second-degree sunburn or a severe third-degree sunburn.”

“First-degree sunburns involve only the top layer of skin called the epidermis. These burns manifest as skin redness, heat, pain and sometimes swelling and tightness,” she explained. “These burns sometimes peel as they resolve. This is the most common type of burn and typically improves in a few days.”

“Second-degree sunburns involve the deeper layer of the skin called the dermis. These have similar but worse symptoms compared to a first-degree burn and can produce more severe inflammation and even blisters,” Dr. Avery said, emphasizing that “this is more serious, and its effects may take weeks to heal.”

“Third-degree sunburns are uncommon, but very serious as they involve the full thickness of the skin layers—both epidermis and dermis—and sometimes extend even deeper,” she said. “These manifest as severe burns and can damage underlying structures such as nerves with long-lasting effects and potentially life-threatening complications.”

Sun poisoning is more severe

Sometimes the sun hits us a little too hard and we feel the effects. This can lead you to wonder: Is this just another sunburn or is it sun poisoning? Knowing the differences is key.

“Sunburns are typically localized to the skin,” said Dr. Avery, “whereas sun poisoning results in systemic, flu-like symptoms, such as headache, fever, dizziness, nausea, vomiting, dehydration and fatigue.”

Additionally, sunburns typically go away after a few days while sun poisoning lasts longer, and the symptoms are more serious. Other symptoms of sun poisoning can include blisters and rapid heartbeat. In fact, some people have described sun poisoning as most of an allergic reaction or sickness rather than just a bad sunburn.

Depending on the severity, treatment for sun poisoning is similar to treating sunburns. A mild case of sun poisoning can be treated at home. Start with getting out of the sun and avoid picking at your skin if it starts peeling or becoming flaky. Over-the-counter pain relievers can help reduce the pain, stinging and discomfort. It is also important to rehydrate because sunburns and sun poisoning cause you to become dehydrated. Also, try a cool compress or cold shower, and use over-the-counter creams such as hydrocortisone or aloe vera.

While mild sun poisoning can be treated and relieved at home, if you experience any symptoms or signs of heat stroke, go to the emergency department or visit your doctor.

There are different stages of a sunburn

“Within a few hours of a sunburn, the skin will begin to become red and painful,” said Dr. Avery. “This progressively worsens with swelling, tightness and sometimes blisters.”

“Over the next few days, the redness lightens, and the damaged skin begins to peel,” she said. “Gradually, the skin returns to normal, but this can take days to weeks, depending on the severity of the burn.”

A sunburn is caused by UV damage

“Sunburns are caused by UV damage to the skin,” said Dr. Avery, “and a pro-inflammatory response that results in immune cell migration and tissue inflammation at damaged sites.”

Both types of UV rays—UVA and UVB—can burn your skin. Also, while anyone can get a sunburn, your chances increase depending on several factors, including how long you are outside in the sun, what medications you are taking and intensity of the UV rays.

Sunburn treatment includes supportive measures

“The best treatment is truly prevention,” Dr. Avery emphasized. However, “once the damage is done, there are supportive measures that can be taken at home including the use of cool compresses, aloe vera gel, topical cortisone creams or NSAIDs [non-steroidal anti-inflammatory drugs] to help with inflammation.”

“If a sunburn involves an extensive amount of skin, or you develop secondary symptoms such as fever, headache, muscle cramps, dizziness, nausea or chills, you should see a doctor for evaluation,” she said.

There is no quick way to heal a sunburn

“Although there are many anecdotal remedies on the internet,” said Dr. Avery, “there are not true ‘quick’ ways to heal a sunburn.”

“The duration of a sunburn depends on the severity, but most will resolve within a few days,” she said.

Sunburns can immediately change your skin

“Some sunburns can immediately leave behind skin changes such as post-inflammatory hyperpigmentation or dyspigmentation,” Dr. Avery said. “Longer term, repeated burns can induce signs of skin damage and photoaging such as wrinkles, skin thinning, dark spots, dyspigmentation and altered skin texture.”

“At a microscopic level, each sunburn results in DNA damage and mutations that can contribute to the [development of future skin cancers](#),” she explained.

Some people are at high risk for sunburns

“There are many factors that play a role in sunburn,” Dr. Avery said, “but individuals with lighter skin tones and fairer features—such as red or blonde hair and light blue or green eyes—tend to produce less melanin, burn more readily and are at higher risk.”

“Other factors include geographic location, being outside during peak sun exposure hours with the highest UV index—typically 10 a.m. to 4 p.m.,” she said. “Prolonged time in the sun and certain medications that can be photosensitizing” can also increase your risk for sunburns.

Take steps to prevent a sunburn

To prevent sunburns, “be cautious of time spent outside during peak UV hours and employ the use of sun protective clothing, such as broad brimmed hats and lightweight UPF shirts or sun sleeves,” Dr. Avery said. It is also important to “use of mineral or chemical [sunscreens with SPF 30 or greater](#).”

“One of the most important things to remember is to reapply your sunscreen every two hours while outside,” she said. “Take special care of commonly missed sites such as the scalp, ears, lips and the tops of hands and feet.”

Ultimately, “although a sunburn may fade, the damage it causes at a cellular level is long lasting,” Dr. Avery emphasized.

There’s a new approved ingredient for sunscreens

“The approval of bemotrizinol is very exciting! As many people know, our country is behind when it comes to sunscreens and we haven’t had a new sunscreen filter for over two decades, so it is about time,” Dr. Avery said. “What is exciting is that it provides protection

against both UVA and UVB rays like a mineral sunscreen, without the downside of the typical 'white cast' caused by mineral sunscreens.”

“Studies have also shown that there is minimal systemic absorption, which is especially pertinent given recent concerns over certain chemical sunscreens and their absorption in the last few years,” she emphasized.