



The Doctor is in

Here Comes the Sun

BY DR. DAVID HILL

When we moved to Wilmington, we imagined spending every spare moment at the beach. It's as easy as feeding all three kids, getting everyone into their rash guards and suits, covering us all in sunscreen, grabbing five towels, filling a cooler with drinks and snacks, strapping the kids into their car seats, stuffing the car with beach toys, driving a few minutes, finding a parking space, and trudging across the searing sand. When we do make it, the last thing we want is sunburn.

What is sunburn?

Sunlight contains visible rays as well invisible ultraviolet (UV) rays. Sunburn occurs when UV rays penetrate the skin and damage the DNA of skin cells, causing some of them to die. As with all toxicities, dose matters: stronger light or longer exposure leads to more severe damage.

Within three to five hours of exposure, blood vessels in the damaged skin swell, giving the skin a reddish hue. In mild sunburn the redness peaks in 12 to 24 hours, then fades within a few days. Sunburn also draws fluid into the skin (edema) and attracts white blood cells to the damaged area, causing inflammation. In more severe cases the skin may blister and peel, just as with other burns. Repeated or severe sun exposure leads to most of the skin changes we associate with aging: wrinkles, liver spots, scaly patches.

What about skin cancer?

As UV light damages the DNA of skin cells, it can lead to cancer. Rates of skin cancer have risen dramatically in recent decades; doctors diagnose about a million new cases every year. There are three types of skin cancer: basal cell and squamous cell carcinomas usually appear in middle age or later, grow slowly, and are rarely lethal. Malignant melanoma is more likely to affect young adults or even children and is much more aggressive, killing about 8000 people a year in the US.

What makes children vulnerable?

Children are particularly vulnerable to sunburn. Most people sustain about sixty to eighty percent of their lifetime sun exposure before age eighteen. Studies show children or adolescents who experience two or more blistering sunburns are at higher risk for squamous or basal cell skin cancers in adulthood. Likewise, melanoma is more common in people who experience deep, intense sunburn as minors.

Who is most susceptible?

Melanin is the dark pigment in skin that provides some protection from sun damage; the less melanin you have the more susceptible you are. Tanning occurs when your skin cells respond to sun damage by making more melanin. But the degree of sun exposure necessary to get a tan increases the risk of photo-aging and skin cancer, so tanning remains a poor way to protect yourself from sunburn.

Also, if you're on any medicines, check with your pharmacist about sun exposure. Common medicines like diuretics, antibiotics, and pain relievers can increase your sensitivity to the sun.

What kinds of sunscreens are there?

Ultraviolet rays come in two types: UVA rays, once thought to be "safe," cause long-term skin damage and contribute to skin cancer; UVB rays are more likely to cause sunburn and also cause skin cancer. The best sunscreens use multiple ingredients to block both kinds of light, but you'll have to read the labels carefully. Another feature to look for is "waterproof." No sunscreen is truly waterproof, but some are better than others. Even "waterproof" sunscreens should be re-applied every two hours at a minimum.

What does SPF mean?

The Sun Protective Factor can be multiplied by how long it would take you to start burning without any protection. In other words, if you'd normally burn after 15 minutes, and you apply SPF-30 sunscreen, you'll burn after 7 1/2 hours. This is a best-case scenario, assuming you apply the sunscreen heavily and keep it on, which very few people do. The SPF refers *only* to protection from UVB rays. There are no standards for comparing sunscreens' effectiveness against UVA.

Can I use sunscreen on my infant?

Low-intensity sun exposure can benefit infants by reducing jaundice and producing vitamin D. But babies' thin skin makes them especially sensitive to sunburn, so it's wise to err on the side of caution. Sunscreens haven't been tested for safety in babies under six months of age. Infants are best protected by avoiding peak sun hours and using protective clothing.

How is sunscreen best used?

Choose a sunscreen with an SPF of at least 15. Sunscreen takes about 30 minutes

to work fully, so apply it ahead of time. Even sunscreens labeled "very waterproof" should be re-applied at least every two hours, especially if you're sweating or in the water. Also remember to cover the lips, ears, and feet! Some children develop allergies to the chemicals in some sunscreens. Consider applying a test patch a few days before using a new sunscreen.

What else can I do?

Given that sunscreens have their limits, you'd do best to stay out of the sun between 10 am and 4 pm, when the light is most intense. Remember, clouds are deceiving: they block visible light, but UV rays penetrate clouds near full-strength.

Protective clothing is important. Tighter-woven, darker fabrics are more protective. Looser clothing works better (stretched fabric allows more light penetration). Special fabrics or laundry additives can improve clothes' effectiveness at blocking UV light, but many powdered laundry detergents already contain whiteners that will boost your clothes' SPF. Most laundered clothing offers an SPF of at least 15. Hats provide protection for the face, the bigger the better. Ideally the brim of the hat should extend three inches.

What do I do for my child if she does become sunburned?

Anti-inflammatory medicines like ibuprofen seem to help with pain. Topical steroids (hydrocortisone) haven't shown much promise in controlled trials. Nor have systemic corticosteroids (prednisone). Moisturizers, aloe vera, and topical anesthetics (Benzocaine) have all been marketed for relief of sunburn, but there are no good studies on how well they work. Cold compresses or soaking in cool water may relieve symptoms, and for itching you might try an antihistamine like Benadryl.

When should my child see a doctor for sunburn?

Any infant with sunburn should be evaluated because of the potential for dehydration. Blistering sunburns, especially in infants, should be evaluated due to the risk for infection. Your doctor may prescribe an anti-bacterial ointment for blistered areas.

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