

UV Radiation: A Little Goes a Long Way

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Health Focus Contributor

Faster than a speeding bullet, more powerful than a locomotive, able to leap tall buildings in a single bound, able to pass through glass without breaking it... We're not talking about a new and improved Superman here, but common sunlight.

The sun is our life source, but its life-giving rays have a darker side. Too much sun exposure is responsible for millions of cases of skin cancer each year as well as cataracts and other vision problems. But it's possible to enjoy the sun without risking our health. Sun screens, protective clothing and good judgment are the keys to staying smart in the sun.

There's been a growing awareness in recent decades of the increase in harmful radiation, as a result of the thinning of the earth's protective ozone layer. In some areas there are large holes in the ozone layer, allowing high levels of radiation to reach the earth.

One such hole stretches from the Antarctic to southern parts of Australia where awareness of the need for sun protection is high. Anyone watching the 2005 Australian Tennis Open in Melbourne would have noticed the long-sleeved clothing and Lawrence of Arabia style headgear worn by the ball boys and girls. Not only is the clothing designed to cover as much of the body as possible, it's also made of a special densely woven fabric designed to limit the amount of UV radiation that passes through.

Studies show a direct relationship between sun exposure and skin cancer and cataracts. The public needs to be aware of the Global UV Index, a safety number that predicts the strength of UV rays on a given day. The Global UV Index, from the National Weather Service, ranks the risk of sunburn in your area on a scale of 1 to 15, with 1 being the lowest risk, equivalent to a cloudy, mid-winter day and 15 being the highest on a sunny summer day. When the risk is 15, sunscreens don't provide enough protection, and it's safer to avoid being in the sun during the peak sunburn hours between 10 a.m. and 4 p.m.

UVA versus UVB

Exposure to ultraviolet light is believed to be the number one cause of all types of skin cancer. Sunlight that has passed through the earth's atmosphere has two types of invisible UV rays, UVA and UVB.

UVA rays are not the ones that tan, but they do cause wrinkles. They can catch you unaware, however, as they pass through glass. As a result, you can be exposed to UVA rays sitting in a sunny window reading a book or driving in the car.

Most windshields and some other window areas of cars have a protective coating to screen out UVA rays, but side and rear windows are not always protected. A protective coating can be applied to household windows to filter UVA rays.

Scientists believe that exposure to UVA rays, once thought to be less harmful than UVB rays, probably plays a role in the formation of melanoma, the most deadly form of skin cancer.

A recently published Australian study found that ultraviolet A rays are also implicated in the less serious skin cancers formerly attributed only to UVB. The study found that UVA rays caused genetic damage in the deeper basal cell layer of the skin. The damage caused by UVB rays tended to be in layers closer to the skin's surface.

It's estimated that 30 minutes in a tanning bed is equivalent to 10 minutes in the Mediterranean sun. A further concern with tanning beds is that they increase overall exposure, making it possible to continue to tan even during fall and winter months when sun exposure would normally be limited by climate.

UVB rays are the ones that tan and burn your skin. UVB rays are strongest in the summer months and are more powerful than UVA rays, damaging skin more rapidly than UVA rays. They're considered to be the main cause of non-melanoma skin cancers that include basal cell and squamous cell carcinomas. Although these non-melanoma skin cancers are more common, they are rarely fatal.

It's important to examine your skin regularly and report skin changes to your physician. If a mole or other area looks suspicious, there are a number of treatment options, including surgical removal, freezing and even topical medications.

Prevention is the best medicine when it comes to skin cancer. Experts estimate that at least 80 percent of all skin cancers can be prevented if people are vigilant about protecting themselves from the harmful rays of the sun.

Staying out of the sun in peak burning times between 10 a.m. and 4 p.m. is a good first step. If you're going to be outside, choose a shady spot to sit or lie and use a wide-brimmed hat and protective clothing. Light, long-sleeved clothing in tight weaves is most effective.

When you're going to be in the sun, use a broad-spectrum sunscreen, which will filter out most of the UVA and UVB rays. Choose one with a SPF factor of at least 15.

Sunscreen needs to be applied very liberally to be effective, and it needs to be reapplied often,

especially if you're in the water. Even if it doesn't wash off, sunscreen is absorbed by your skin.

Physical tanning blocks that give lifeguards their white noses have been redesigned for wider appeal. The zinc and titanium particles are now micronized and are so tiny as to be almost invisible...while still providing an effective sunblock.

The number of skin cancers diagnosed in the United States has been rising from four to five percent per year. According to the American Cancer Society, an estimated 1.3 million new cases of non-melanoma skin cancer will be diagnosed this year. Some 88,000 people will be diagnosed with melanoma, the deadliest form of skin cancer.

Melanoma, the most common cancer among women aged 25 to 29, originates in the melanocytes, cells responsible for manufacturing pigment in the skin. This type of cancer can spread quickly; yet if it is detected early, it can be successfully treated and cured.

Our skin is our largest organ and our interface with the elements. Its job is to protect us and screen out unwanted invaders. But our skin needs a little help from us. We need to make smart lifestyle decisions such as wearing hats, protective clothing and sun screen as well as staying indoors or in the shade during the sunniest times of day so as to minimize harmful burns. By consistently protecting our bodies from harmful UV rays we can reduce our risk of skin cancer.

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