

# Taming the rays

Enjoy the sunshine but fear it, too



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Most people agree that plenty of physical activity in the fresh air is a cornerstone of a healthy lifestyle. But most also realize that the sun's ultraviolet (UV) rays can damage skin and lead to premature aging and, worse, skin cancer. "Overexposure to solar radiation is the major cause of malignant melanoma," says epidemiologist Dr. Loraine Marrett, chair of the Canadian Cancer Statistics Steering Committee. So gone — or at least going, we hope — are the days when folks competed to see who could get the darkest summer tan.

To get the scoop on how to enjoy the sun and still maintain the integrity of your integument — the body's largest organ — *Canadian Health* contacted Dr. Jason Rivers, a clinical professor of dermatology at the University of British Columbia in Vancouver and regional director of the Canadian Dermatology Association (CDA) BC Sun Awareness Program.

## Prudence is the best protection

"Sun protection is best provided by avoiding sun exposure during the peak times of solar insolation during the summer months, the period from 11 a.m. to 3 p.m.," says Rivers. During this period, keep to the shade as much as possible and wear clothing as a primary physical barrier to the sun including hats, long-sleeved tops and pants. (Scarlett O'Hara and those other Southern belles in *Gone With the Wind* with their lace mittens, parasols and wide-brimmed hats had it right!) "Use sunscreen for those areas that can't be covered up," Rivers adds.

## Not all sunscreens are created equal

Sunscreens contain chemicals that absorb or reflect solar rays. Choose a broad-spectrum type with a sun protection factor (SPF) of at least 15. The SPF number rates the filtering power of the screen — it's the ratio between the amount of UV that causes sunburn in sunscreen-protected skin compared with that in unprotected skin.

Use a broad-spectrum sunscreen that protects against both the searing UVB rays, which cause sunburn, and their penetrating UVA counterparts, which promote aging and cancer.

Warning: if a product is not used properly, the SPF may be much lower than that listed on the label. For sports activities, choose a screen made to last during hard physical exertion with lots of perspiration. Look for the CDA logo on the bottle or tube.

## Using sunscreen

Apply sunscreen generously and evenly about 15 to 20 minutes before sun exposure to allow the active ingredients to bond to your skin. A second application 20 minutes later will maximize your protection. "In real life, however, nobody does this, and few dermatologists even would be aware of this fact," says Rivers. Reapply sunscreen every few hours or after swimming or perspiring.

## Check the expiry

Sunscreens contain degradable chemicals that eventually lose some of their effectiveness, so toss all products after their expiry dates. Also, sunscreens are often exposed to high temperatures — in the glove compartment of your car, for example — which can accelerate the breakdown of chemicals.

## Unintended effects?

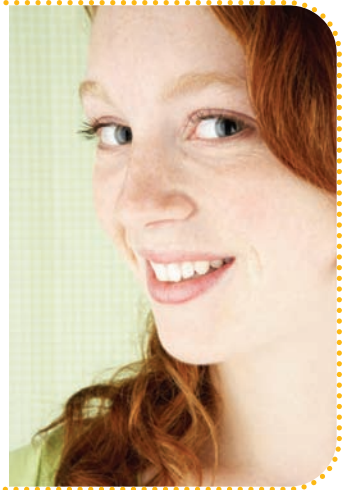
Does the availability of good sunscreens just encourage people to spend more time in the sun? "There are some studies to suggest this, especially with younger people," says Rivers. "But our public health messages emphasize that sunscreens are to be used as an adjunct to other sun-protection measures. Obviously, not everyone will heed our recommendations." Bottom line, says the CDA, don't use sunscreen as an excuse to overexpose yourself to solar rays.



## Risk factors

While overexposure to radiation from the solar or artificial UV light is the primary cause of skin cancer, additional factors increase the risk of developing it:

- light skin, eyes or hair (particularly red)
- skin that burns or freckles easily and tans poorly
- a personal or family history of skin cancer
- moles
- working or exercising in the sun for long periods



## Lips

Lips are vulnerable to sun damage, too. Apply a minimum SPF 15 lip balm every few hours.

## Eyes

Don't forget to don good-quality UV-ray-blocking wraparound sunglasses. These are especially important at the beach, where damaging UV light can be reflected back into the eyes from that sparkling blue water and lovely golden sand. The Canadian Ophthalmological Society in Ottawa recommends buying glasses that block at least 99% of UVA and UVB rays (these will not necessarily have dark lenses). Favour effectiveness over fashion.

## Vitamin D

The sun's UVB rays prompt skin cells in the epidermis to make vitamin D from a cholesterol-like substance. So, does wearing heavy sunscreen interfere with the body's ability to make this important nutrient that may protect us against lethal non-skin cancers? "Sunscreen can interfere with production if it is used properly," says Rivers. "But in summer, you can achieve adequate vitamin D levels by exposing the skin of the arms and legs to the sun for just 15 minutes, three times a week." If you're worried about getting enough, Rivers recommends

taking a vitamin D supplement of 800 international units a day.

## Sensitivity

In rare cases, modern chemical sunscreens may cause skin reactions, especially when they come in contact with sunlight. The solution may be a good old-fashioned physical sunblock such as zinc oxide or titanium oxide — like the kind your dad wore as a teenage lifeguard. People allergic to or intolerant of chemical sunscreens should look for products labelled "chemical-free." If you have sensitive skin, always try a small amount of the product on your arm and check for any reaction up to 48 hours later.

## What happens during tanning and burning?

Tanning occurs when the sun causes minor damage to the DNA of skin cells and activates a defensive pigment called melanin. "This turns on the process of tanning, which is protective against further DNA damage," says Rivers. Burning occurs when there is extreme cell damage followed by apoptosis, or programmed cell death, wherein cells die and are shed from the skin. "Clinically, this is represented by inflammation, which causes the redness, and a few days later, by the peeling off of dead skin." If UV rays

damage the DNA of certain genes that control cell growth, skin cancer may develop.

### Fake your tan

“Although equipment varies widely, the lights in salon tanning beds can potentially give off as much UV radiation as the sun, and this can have the same effect as solar UV rays in July,” says Marrett. “The Canadian Cancer Society recommends that tanning beds be restricted to persons over age 18.” If you must look tanned, be a bottle bronze!

### Sunburn

But if you inadvertently get fried in the sun, here is Rivers’s advice. Cool the area with a cold wet compress, take an anti-inflammatory medication such as ibuprofen and possibly apply a topical steroid cream such as hydrocortisone.

With a little forethought and few protective measures, you can still enjoy Canada’s all-too-brief summer sunshine.

## The skinny on skin cancer



- Skin cancer is the most common form of cancer in Canada.
- The incidence of skin cancer is rising.
- In 2009, an estimated 75,000 Canadians will be diagnosed with skin cancer.
- In 2009, there will be an estimated 5,000 new cases of malignant melanoma, the lethal form of skin cancer that accounts for 6% of skin cancers — and 940 deaths.
- One in seven Canadians will develop some form of skin cancer during their lifetimes.
- Skin cancer represents one-third of all new cases of cancer each year.

— Canadian Cancer Society

For more information on skin care, visit the website of the Canadian Dermatology Association at [www.dermatology.ca](http://www.dermatology.ca).

## Solar POWER

George Martell of Toronto knows a thing or two about the might of the sun. The 69-year-old retired social sciences professor grew up in the era before sunscreens and in an age when it was assumed that youngsters needed plenty of sun. “I am very fair-skinned, but as a teenager I played a lot of tennis with my shirt off,” he says. (Like George, we sun-worshipping northerners often behave like our primordial ancestors who evolved near the equator with dark-pigmented skin that protects against solar radiation. But as we moved north, our skin became lighter to improve UV absorption and vitamin D production in less sunny climes. Now it needs protection from — not overexposure to — the sun.)

“I got badly burned every summer as a kid and at age seven, I was also badly scalded on my back by a hot-water jet at a swimming pool,” adds George. “I lived lying on my stomach for three weeks and had huge blisters.” Two years ago, George started being treated for precancerous lesions on his face and both basal cell and squamous cell cancers on his chest and arms. He was also treated for malignant melanoma on his back — at the site of his childhood scalding. Now he sees his dermatologist for surveillance every four to six months. And although he’s an avid cottager, “I stay out of the sun, wear long sleeves and a hat, and I cover exposed areas with sunscreen,” he says. ☞

