

Q&A: What sunscreen is best? A dermatologist offers advice on protecting your skin

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Sunburn is a sign that skin has experienced significant levels of damage. Ultraviolet light can change a person's [DNA structure](#), which can lead to

[cancer](#). At the same time, choosing from the multitude of modern sunscreens can be overwhelming. Health & Medicine editor Nadine Dreyer asked dermatologist Bianca Tod what to look for in sun protection.

What are the dangers of too much exposure to the sun, especially in Africa?

People living in Africa are exposed to high levels of [solar radiation](#). The continent includes a wide range of latitudes, as well as the Equator.

Even the most northerly and southerly points of Africa experience significant levels of solar radiation. Altitude, weather patterns and other phenomena influence the intensity of this radiation.

People's lifestyles also determine the level of solar radiation that they are exposed to. Do they work or socialize outside? How much does their traditional dress cover them up?

The sun has many [beneficial](#) effects, for example improving mood and contributing to vitamin D levels, but it is easy to overdose!

The immediate dangers include sunburn, dehydration, heat stroke, and even changes to the immune system. Some of the [long-term effects](#) are [eye damage](#) such as cataracts, visible aging, and [skin cancer](#).

Are people with dark skin at risk?

Melanin, which is the main skin pigment, offers protection to living tissues. The more concentrated the melanin, the darker the skin color.

So, someone with a [darker skin](#) has a greater degree of inherent

protection against some of the negative consequences of sun exposure, compared to someone with light skin color. This protection is not absolute and varies with the skin color.

There are many types of skin cancer, but sun-related skin cancers occur far more commonly in people with light skin colors, especially people with [blue eyes](#), and red or blonde hair.

But that doesn't mean they don't occur in people with darker skin colors, and we certainly see them in people with light brown skin. We occasionally see skin cancer in people with very dark skin. To what extent sun exposure drives these cancers is still not clear. This is an area where we need more research.

People with dark skin are more likely than people with fair skin to develop vitamin D deficiency if they have low levels of sun exposure. Lack of vitamin D has many [side-effects](#). It can lead to fatigue, bone pain and muscle cramps as well as [mood changes](#), such as depression.

People with dark skin colors are also more prone than people with light skin to develop uneven or blotchy pigmentation after sun exposure.

Eye damage from the sun occurs in people with all [eye colors](#).

What should we be looking for when choosing sunscreen?

Choosing from the multitude of modern sunscreens can be overwhelming, even for a dermatologist.

There are a couple of basic principles that can guide us though.

There are many different types of rays present in sunlight. We are still learning about all the parts of the [solar spectrum](#) that have important effects on our skin.

The rays that are most damaging to our skin are called ultraviolet rays. There are both UVB and UVA rays.

Most [UVB](#) from the sun doesn't reach us. It penetrates our skin relatively superficially. But nevertheless it can cause sunburn and some types of skin cancer.

Sun protection factor (SPF) is a measure of UVB protection. Sunscreen should have an SPF of at least 30, but preferably 50. This is because very few of us actually apply as much sunscreen as the manufacturer uses to test the product, so we actually get a lower SPF out of our product.

Around [95%](#) of the ultraviolet radiation we experience is UVA. It penetrates the skin more deeply than UVB. It plays a role in tanning, sunburn, aging and skin cancer.

This is where things get very confusing. There is some variation in how manufacturers report UVA protection. You might see PA+ (protection grade of UVA), a star-rating or UV protection factor (UPF). Most sunscreens simply indicate that it is present, or say "broad-spectrum".

Finding a sunscreen with particularly high levels of UVA coverage is probably only beneficial to people with [darker skin](#) colors who are worried about the evenness of their complexion, and people already struggling with uneven pigmentation.

This is because this portion of the light spectrum drives the development of uneven pigmentation. Look for brands that state that their sunscreen is

"anti-dark spot", if this is a concern to you.

Visible light, especially [blue light](#), and [infrared radiation](#) protection, are now included in some sunscreens. Both types can damage the eyes. Visible light in particular plays an important role in uneven pigmentation.

It's important to apply sunscreen [correctly](#) and to remember that [protection](#) is more than just [sunscreen](#).

How much damage does sunburn do? What can we do to prevent this?

Sunburn is to be avoided at all costs. It's a sign your skin has been damaged.

If you look at sunburned skin under a microscope, you'll see [swelling](#), [dead skin cells](#), [dilated blood vessels](#), and [changes in immune cells](#) that fight harmful substances and germs that enter the body.

Ultraviolet light can actually change the structure of your DNA, which can lead to a [mutation](#) in a specific gene that either promotes cancer or one that fails to suppress cancer.

Luckily, our bodies have a number of safety mechanisms to prevent this, but the more we strain this system, the greater our chance of developing [skin cancer](#). Melanoma, in particular, can be deadly if it is picked up only when it's advanced.

Once you have a sunburn, there's not a lot that you can do besides relieving the symptoms with rest, anti-inflammatories, moisturizers, and oral hydration.

With all these dangers, it's really important to avoid sunburns, especially in children. They have many decades ahead for mutations to accumulate, and childhood sunburns are a risk factor for developing melanoma later in life.

Early [sun protection](#) is like saving for your retirement.

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