Sunscreen: Why wearing it even in winter could be a good idea

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Sunscreen has taken center stage in many skincare routines, especially among those hoping to prevent visible signs of aging. But while it makes sense to wear sunscreen every day in the summer when the sun's rays are

most powerful, many may wonder whether there's any benefit of wearing sunscreen daily in the winter months.

The sun's radiation can reach us during all times of the year. This means that in both summer and winter, we are exposed to infrared radiation, as well as UVA and UVB rays.

UVB is mainly responsible for sunburn and DNA damage—and can also cause skin cancers as a result of long-term exposure. UVA radiation does contribute to these processes somewhat, but it's less effective at doing so. UVA can penetrate deeper into the skin, however, which can damage the collagen—a key part of the skin that keeps it firm and elastic. This can cause the skin to age faster, leading to wrinkles, fine lines and changes in pigmentation.

The amount of UVA and UVB radiation that reaches the Earth's surface changes across the seasons. This is due to the angle of the sun in the sky, as well as other factors such as latitude and time of day.

For example, let's compare how UVA and UVB radiation varies at solar noon in London, UK and Kuala Lampur, Malaysia (which is near the equator).

In latitudes closer to the equator (such as in Kuala Lampur), the amount of UVA and UVB radiation throughout the year remains fairly consistent. But in higher latitudes, such as London, there's almost no UVB radiation throughout the winter months—whereas there's still some UVA radiation.

Not only that, but people living further from the equator may tend to spend less time exposed to the sun in winter due to the colder temperatures and variable weather. And when they do go outside, they may cover their skin up—usually leaving only their face exposed to the

sun for much shorter periods of time.

But UVA radiation can still penetrate through clouds and windows. While our exposure to these rays is probably minimal, skin damage from UV exposure is accumulated over decades, so anything that can be done to reduce exposure (and damage) over time may be beneficial. This is also true of UVB exposure—although it is less relevant in winter months at higher latitudes.

This may be where daily sunscreen use during the winter is still of benefit. Sunscreens are formulated to reduce exposure to both UVB and UVA rays—although they are usually more effective at reducing exposure to UVB radiation. They have been designed in this way to prevent the most damaging effects of the sun, such as sunburn and DNA damage. The impact of exposure to UVA radiation has only been considered more recently.

Numerous studies have shown regular sunscreen use over many years is effective at preventing skin damage, photoaging and skin cancers. The most robust trials suggest daily sunscreen use is most effective, but this will be dependent on the factors discussed above.

The effects of altitude and snow

One place where winter sunscreen use is especially important is when skiing or snowboarding—or when you're otherwise going to be outside for extended periods of time, at higher altitudes on snow-covered mountains.

Both altitude and snow can increase the doses of UVA and UVB radiation a person receives. Snow can reflect up to 80% of UV radiation emitted by the sun—effectively almost doubling the doses received. Also, for every 1,000-foot increase in altitude, there's a 10% increase in

UV exposure. This is why it's essential to protect the skin and eyes by wearing sunscreen, protective clothing, and sunglasses that block both types of UV rays. This is also true when spending time in snowy environments, such as when hiking or skating.

Sunscreens are generally regarded as safe and tend to have few adverse effects, so you don't need to worry too much about wearing one throughout the year. However, there are some points to consider, especially if you have skin conditions. For example, sunscreen can exacerbate acne and cause irritation and allergic reactions—although these are rare.

There are also emerging concerns from regulatory agencies about the absorption of UV filters into the body. However, the consequences of such absorption and the potential effects on health are not well defined and require more research.

Still, the benefits of sunscreen have been widely demonstrated—as has their safety. So, if you want to prevent premature signs of aging, it's important to use sunscreen at all times you may be exposed to the sun—especially in the summer months. While the benefits of wearing sunscreen in winter are less well-defined, there's probably no harm in wearing one if you want to.

If you decide to use sunscreen in winter, use ones that have broad-spectrum five-star UVA protection. For day-to-day use, high SPF sunscreens are unlikely to provide a large benefit, particularly if spending only short periods outside. However, if skiing, a high-SPF sunscreen with five-star UVA protection would be beneficial.

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