Eyecare professionals know that the cornea, crystalline lens, and even the retina can be damaged by long-term UVR exposure, which has been implicated in a variety of severe ocular conditions, including pterygium, climatic droplet keratopathy, cortical cataract, and possibly age-related macular degeneration. And scientific studies have found UVR dangers that were previously unknown.

Fortunately, Essilor scientists have found an effective way to counter these hazards, and patients can now buy lenses that give them the most complete protection from UVR 365 days a year. What we need going forward is greater public awareness of the dangers of UVR and more widespread adoption of UVR-protective lenses.

Indirect Risks

One thing we have learned is that UVR risk to the eyes isn’t greatest when the sun’s energy is strongest. Because they are set into the orbit and protected by the upper lid, the eyes are shielded from direct sunlight when the sun is high in the sky, which is when it causes most damage to the skin. For the eyes, the risk is greatest when the sun is a bit lower in the sky—in mid-morning and mid-afternoon—times when people are less likely to wear sunglasses. Thus, the need for UVR protection is not limited to sunglasses: people need UVR protection in every pair of lenses they wear outside.

Direct UVR exposure is not the only danger. Indirect UVR (that is scattered by clouds and reflected from the ground and other surfaces) actually accounts for nearly half of an individual’s annual UVR dose. This UVR is a particular threat to spectacle wearers because UVR coming from the side and behind the wearer can be reflected into the eye by the back surface of the spectacle lens. Although most higher-quality lens materials do a good job of blocking UVR transmission (ie, stopping UVR from passing through the lens), they can still reflect a significant amount of UVR from the back surface of the lens directly into the eye.

The public is fully aware of the risks associated with skin exposure to UVR, but the ocular hazards—and how to protect against them—are much less known. The dangers of back surface UVR reflection, for example, are not well known. Eyecare professionals have a key role to play in creating awareness of the importance of maximum eye protection from UVR.

Technology

Work by Karl Citek, OD, PhD, Professor of Optometry, has established that traditional anti-reflective or No-Glare lenses, although they transmit almost 100% of visible light, actually reflect considerable UVR. Some No-Glare lenses reflect between 10% and 50% (with a mean 20%) of incident UVR.

This important discovery was the stimulus for development of Essilor’s Broad Spectrum Technology™ (patent pending), which reduces UVR reflection (E-SPF 25)*. Unlike traditional anti-reflective or No-Glare lenses, although they transmit almost 100% of visible light, they transmit almost 100% of visible light, actually reflect considerable UVR. Some No-Glare lenses reflect between 10% and 50% (with a mean 20%) of incident UVR.

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Recent research has found new and unexpected risks to the eyes from the ultraviolet radiation (UVR). Innovative technology from Essilor can help reduce those at risk and protect eyes from UVR 365 days a year.

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