FAST FACTS FOR YOUR HEALTH

THE **SUN** & YOUR **EYES**: WHAT YOU NEED TO KNOW

Did you know it's just as important to protect your eyes from the sun's harmful rays as it is to shield your skin?

The intense ultraviolet (UV) rays of the sun may damage sensitive cells in the eyes, potentially affecting vision. Experts say it is difficult to isolate the exact amount of damage that UV radiation imposes on the eye over a long period. However, a number of studies have shown that the effects build up and may increase the chance of developing eye problems later in life. These may include cataracts, a clouding of the lens of the eye. Cataracts are a leading cause of reduced vision in the United States in people age 60 and older, according to the National Eye Institute.

ABCs of Ultraviolet Radiation

There are three ranges of UV radiation: UVC, UVB and UVA. The most damaging form is UVC, but luckily it's absorbed by the Earth's atmosphere and doesn't reach us. Exposure to UVB rays is closely linked with photokeratitis (a kind of sunburn of the cornea), and cataracts, and possibly other conditions.

Eye Damage in the Short Term Is Possible

It can take years before you experience any of the sun's damaging effects on your eyes. But, some damage can occur in the short term, such as photokeratitis and photoconjunctivitis, an inflammation of the membrane outside of the eye (think pink eye). If your eyes feel tired, sore and gritty after a day at the beach, skiing or boating, you may have experienced UV radiation exposure.

Unexpected Sources of Ultraviolet Radiation Exposure

Although direct sunlight from the sun itself can be extremely damaging to eyes, reflected UV rays can be even more dangerous. For example, grass, soil and water reflect less than 10 percent of the UV radiation, but fresh snow reflects as much as 80 percent, dry sand about 15 percent and sea foam about 25 percent. And, because you're more likely to look down than up, there is a difference in the amount of UV light reflected directly into your eyes. Hats with brims offer no protection from UV rays reflected up from surfaces such as pavement, sand and water.

More is better when it comes to protecting your eyes from the sun, according to eye experts.

The time of day also influences the available UV rays, but eye exposure to it is quite different than for skin. At noon, the UV dose can be as much as 10 times higher than the dose three hours earlier or later. But because the eye is naturally shaded by the brow ridge when the sun is high in the sky, the highest ultraviolet radiation exposure for eyes is actually in the morning and mid-afternoon, rather than at noon, as it is for skin. Sun exposure to the eyes tends to be more constant in fall, winter and spring when the sun is lower in the sky.

Helping to Protect Your Eyes from Sun Exposure

While sunglasses are definitely a good idea when it comes to eye protection, not all sunglasses are created equal. Choose sunglasses that limit transmission to no more than 1 percent UVB and 1 percent UVA rays. Sometimes the information on the glasses will say they block at least 99 percent of the UV rays. That's OK. Other things to look for:

- Lenses large enough to completely cover the eye and prevent as much light as possible from entering through the edges of the glasses. Wrap-around sunglasses are best.
- Darker lenses, particularly if you are more light sensitive.
- Gray lenses. They provide the least color distortion, but not any better protection than other colored lenses. While most sunglasses can help block UV rays from entering through the lenses, most frame styles do not prevent rays from reaching the sides, top and bottom of the glasses.

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UV blocking contact lenses can also provide an important measure of additional protection. The level of protection can vary. Contact lenses that help protect against transmission of harmful UV rays are classified into two categories: Class 1 and Class 2. Class 1 UV-blockers provide the greatest measure of UV protection.

Questions to Ask Your Eye Care Professional

1. Is protection from UV exposure to my eyes important all-day and all-year round?
2. What activities can make my eyes most at risk from UV radiation?
3. Are my children's eyes more at risk from exposure to UV radiation?
4. Which type of sunglasses provide the best protection against UV rays?
5. How do I know if my contact lenses have UV-blocking?

Not all contact lenses offer UV protection, and in fact most do not. Of those that do, not all provide similar absorption levels. For example, all ACUVUE® Brand Contact Lenses offer either Class 1 or Class 2 UV-blocking. ACUVUE® Brand offers contact lenses such as ACUVUE® OASYS® Brand Contact Lenses and 1-DAY ACUVUE® TruEye® Brand Contact Lenses with the highest level of UV blocking available, blocking more than 90 percent of UVA rays and 99 percent of UVB rays that reach the lens.†*

1-DAY ACUVUE® MOIST® Brand Contact Lenses block, on average, 82 percent of UVA and 97 percent of UVB rays.†* Some other soft contact lenses and many rigid gas-permeable lenses also offer Class 2 UV-blocking. Although UV-blocking contact lenses are beneficial in helping to protect against harmful UV rays, clinical studies have not been done to show they reduce the risk of any specific eye disease or condition. On average, contact lenses without UV blocking capability allow 90 percent of UVA radiation and 70 percent of UVB radiation to pass through the lenses to your eyes. Although UV-blocking contact lenses provide important added protection for wearers, they should not be viewed as a stand-alone solution. Contact lenses should always be worn in conjunction with high-quality UV-blocking sunglasses and a wide-brimmed hat.

Protect Your Children's Eyes

Researchers estimate that a significant amount of lifetime exposure to UV rays may occur by age 18 and that children's annual dose of radiation may be up to three times that of adults. Compared to their parents, children have larger pupils (allowing more light into their eyes) and clearer lenses and are outside without eye protection much more frequently and for longer periods than most adults. That's why it's so important to protect children's eyes with appropriate eyewear.

More Sun Protection Is Better

More is better when it comes to protecting your eyes from the sun, according to eye experts. If you're planning to be out in the sun, protect your eyes with a combination of quality sunglasses, UV-blocking contact lenses and a wide-brimmed hat.

Resources

American Optometric Association
"UV Protection with Contact Lenses"
800-365-2219

American Academy of Ophthalmology
"The Sun, UV Radiation and Your Eyes"
415-561-8500

Prevent Blindness America
"Protect Your Eyes From the Sun"
1-800-331-2020

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Important information for contact lens wearers:

ACUVUE® Brand Contact Lenses are available by prescription only for vision correction. An eye care professional will determine whether contact lenses are right for you. Although rare, serious eye problems can develop while wearing contact lenses. To help avoid these problems, follow the wear and replacement schedule and the lens care instructions provided by your eye doctor. Do not wear contact lenses if you have an eye infection or experience eye discomfort, excessive tearing, vision changes, redness or other eye problems. If one of these conditions occurs, contact your eye doctor immediately. For more information on proper wear, care and safety, talk to your eye care professional and ask for a Patient Instruction Guide, call 1-800-843-2020 or visit **www.acuvue.com**.

† ACUVUE® Brand Contact Lenses with UV blocking help protect against transmission of harmful UV radiation to the cornea and into the eye.

* WARNING: UV-absorbing contact lenses are NOT substitutes for protective UV-absorbing eyewear such as UV-absorbing goggles or sunglasses because they do not completely cover the eye and surrounding area. You should continue to use UV-absorbing eyewear as directed. NOTE: Long-term exposure to UV radiation is one of the risk factors associated with cataracts. Exposure is based on a number of factors such as environmental conditions (altitude, geography, cloud cover) and personal factors (extent and nature of outdoor activities). UV-blocking contact lenses help provide protection against harmful UV radiation. However, clinical studies have not been done to demonstrate that wearing UV-blocking contact lenses reduces the risk of developing cataracts or other eye disorders. Consult your eye care practitioner for more information.

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