

Sunglasses



Fashionable fun and practical too

Do you need sunglasses?

Wearing sunglasses makes sense. Properly chosen sunglasses will protect your eyes against damage from ultra-violet rays (UV), bright light, and blue light. Although the human body is able to replace some damaged cells, the cells in the lens of the eye are never replaced. Most sunglasses, coated with UV blockers, block ultraviolet B rays, but the cheaper ones may cheat a little on ultraviolet A. It pays to examine the label. (Some contact lenses also block UVB -- ask your optometrist.) There are also other safety factors to consider. For example, if you are driving a vehicle in bright sunlight, it is safer to wear sunglasses, because they reduce glare and improve contrast. When you are outside in bright sunlight, you can also help protect your eyes and the skin around them by wearing a wide-brimmed hat or visor.

About UV Radiation and Blue Light

Most people understand the spectrum of light from the perspective of a rainbow. We see the colours of visible light, from the long wavelength of the reds to the shorter wavelength of blue light. Blue light is visible and the intense glare of light reflecting off snow or water will also contain some blue light. Your eyes cannot focus clearly in blue light. Some research has suggested that routine exposure to blue light over many years may cause the retina (the light-sensitive lining of the inner eyeball) to age faster and increase the risk of blindness in some people over the age of sixty.

Beyond the edge of the blue part of visible spectrum are the UV (ultra violet) rays. You cannot see UV radiation but UV rays carry more energy than visible light rays, so the eye is at greater risk of damage from absorbing UV radiation than from absorbing other kinds of light. Most of the eye damage caused by UV radiation builds up over a long period of time and cannot be reversed. Damage from UV is more likely to be in the tissues toward the front of the eye and can include earlier development of cataract.

How Light Can Damage Eyes

All light is a form of energy which creates heat or chemical reactions within the eye tissues as it is absorbed. If eyes are overexposed to UV radiation the protective layer on the front surface of the eye may be damaged, at least temporarily. Snow blindness and arc welding flashes are examples of this. Excessive exposure to sunlight can cause the same type of damage although often symptoms of pain may not occur until 12 to 18 hours after this exposure. There is some evidence that daily exposure to UV radiation in very bright sunlight over many years may increase the risk of developing cataracts which cause a gradual clouding of the natural lens of the eye. Exposure may also increase risk of macular degeneration, an eye condition resulting from damage to the retina.

What about children?



Children need to wear sunglasses as much as adults do because their eyes need protection from UV radiation. Also, children may spend many hours in the sun and they often have larger pupils that let more light enter the interior of the eye. Even children with dark eyes, should wear sunglasses. Wrap-around styles are better as they extend protection to the delicate skin around a child's eyes and children who wear prescription glasses can get prescription sunglasses or use clip-ons. For children the key issue is wear-ability; it is important to choose something comfortable, something they will be happy to wear.

Do eyes have natural ways of coping with sunlight?

Yes, eyelids can act like blinds on a window to shut out light at will; pupils adjust by opening and closing according to the intensity of light they are exposed to; and the retinas at the back of your eyes adapt to different brightness levels. These mechanisms respond quickly to variations in visible light, but cannot completely keep out ultra-violet (UV) radiation. Looking at the sun is always dangerous.

What to look for when choosing sunglasses.

The most important aspects are the lens quality and the lens colour. Lenses come in a huge variety of tints, and can be made of glass, various plastics, or polycarbonate. Make sure the lenses are dark enough to keep your eyes comfortable, but not so dark

that they reduce your vision. If you spend a lot of time outdoors in intense glare from sunlight reflecting off snow or water, you should wear sunglasses that block blue light. Medium to dark lenses with a grey, or a slightly brown or green tint, will filter out most blue light as will those labelled 'blue blockers'.

People who know that they have deficient colour vision need to be careful with their selection of sunglass lens tints.

Bronze tint is not good for a green deficiency; and green is not good for either red or green deficiency. Grey lenses do not distort colours so may be preferred by some people.

Tints can be solid, which reduce the brightness of everything evenly, or graduated.

Polarizing lenses cut glare due to reflection. This means they are good for driving and outdoor activities in the snow or on water. Polarizing lenses are not recommended for aviators for a variety of reasons. They may also make digital instrumentation on vehicle dashboards difficult to read.

Photochromic lenses generally respond to the intensity of UV light by turning darker outdoors and lighter indoors. These will not perform well when driving as the vehicle windscreen absorbs most UV rays, however, some types of photo-chromatic lenses react to visible light and perform better for drivers - ask your optometrist for advice.

Glass lenses are generally more resistant to scratching. However, they are more easily broken than plastic lenses, and this carries with it a safety risk when playing sports and the like. They are also likely to be heavier and therefore potentially less comfortable. High quality glass lenses are excellent at selectively absorbing undesirable rays and are available in regular or photochromic forms.

Resin (plastic) lenses are safer than glass as they do not shatter so easily. The addition of a scratch-resistant hard coating helps to ensure a long life. Plastics are as optically correct as glass and are lighter in weight. They are available in solid tints, graduated tints, polarised, or photochromic forms.

Polycarbonate lenses are stronger still and are a must for eye safety when playing sports such as cricket. They offer the ultimate in eye protection and safety, and again the range of options is extensive.

Most options are available as prescription lenses. Your optometrist can discuss the huge range of options available, to ensure your requirements are met.

Standards for UV Protection

You cannot tell how much UV protection a pair of sunglasses will provide by their price, colour, or by the darkness of the lenses. Look for a label that lists the type and amount of UV protection.



What about the frames?

Look for frames that are comfortable, serviceable and look good on you. Close fitting wrap around styles offer better protection for the eye itself and also for the eyelids and delicate skin around the eyes. Some wrap around frames can be fitted with tinted prescription lenses made to your individual specifications. Although these may be a little more expensive than standard options, the comfort and feel of these may well be worth it.

Plastic sunglass frames are generally strong and durable. Some cheaper plastic frames may not be adjustable for individual facial differences. Take time to choose frames that fit well, particularly on your nose, and can be adjusted to ensure they will be comfortable to wear.

Metal sunglass frames are usually adjustable. They often have more moving parts that will require maintenance. Cheaply made metal frames may be brittle metal and, as a result, less durable.

Some final words of advice.

No sunglass lens is ever dark enough to observe the sun or eclipses. Never ever look directly at the sun or an eclipse. This could result in permanent loss of your vision.

Sunglasses do make it difficult to see well in poor light conditions so dark lenses should never be worn while driving at night.

To ensure your sunglasses last as long as possible, we recommend storing them in a case that provides strong protection. A wide selection of cases is available from your optometrist.

See your optometrist for sunglasses and vision information tailored to your individual needs. Protect your eyes now and for the future.

Regular Eye Exams

The NZ Association of Optometrists recommends a regular eye examination every 2– 3 years for healthy adults. After age 65 more frequent exams are a wise precaution to ensure early diagnosis and treatment of sight threatening conditions such as glaucoma and age-related macular degeneration (ARMD).