

Sunglasses



To protect eyes from ultraviolet (UV) radiation, Cancer Council Victoria recommends sunglasses that are close-fitting; wrap around and cover as much of the eye area as possible; meet Australian Standard AS 1067:2003 for sunglasses; and are marked eye protection factor (EPF) 10.

When the UV Index is at 3 or above use a combination of the five sun protection measures:

1. **Slip** on some sun-protective clothing.
2. **Slop** on SPF30+ broad spectrum, water-resistant sunscreen and re-apply every two hours.
3. **Slap** on a hat – that protects your face, head, neck and ears.
4. **Seek** shade.
5. **Slide** on some sunglasses – make sure they meet Australian Standards.

Sun protection is required when the UV is 3 and above – UV levels are most intense during the middle of the day.

To find out UV Index levels look for the SunSmart UV Alert in your daily newspaper's weather section or visit bom.gov.au/weather/uv or sunsmart.com.au

Live UV levels for capital cities are available from arpansa.gov.au/uvindex/realtime

How does UV radiation affect the eyes?

Exposing the eyes to too much UV radiation can cause short-term complaints such as:

- mild irritation
- excessive blinking
- swelling
- difficulty looking at strong light¹
- acute photokeratopathy, also known as sunburn of the cornea or snow blindness.

Exposure to UV radiation over long periods can lead to more serious damage to the eyes such as:

- cataracts, or cloudiness of the lens
- cancer of the conjunctiva, the membrane covering the white part of the eye
- pterygium (pronounced tur-rig-i-um), an overgrowth of the conjunctiva on to the cornea
- solar keratopathy, or cloudiness of the cornea
- skin cancer of the eyelids and around the eyes
- ocular melanoma.¹⁻⁸

How can I reduce UV radiation exposure to my eyes?

A broad-brimmed hat can reduce UV radiation to the eyes by 50%.⁷

A broad-brimmed hat and sunglasses, which meet Australian Standard AS/NZS 1067:2003 (Sunglasses and fashion spectacles: sunglasses category 2, 3 or 4), can reduce UV radiation exposure to the eyes by up to 98%.⁹ The Australian Standard measures how much UV radiation goes through the lens, and defines lens width and height measurements for effective eye protection. The use of large, wrap around, close-fitting sunglasses helps to reduce reflected UV radiation and glare, which passes around the edge of the sunglasses and reaches the eyes.

Sunglasses labelled EPF10 exceed the requirements of the Australian Standard and may provide even greater protection.¹⁰

The colour or darkness of the lenses *does not* indicate the level of sun protection; you still need to check the label. To reduce glare a darker-tinted sunglass lens or polarised lenses may be required.

Swimming goggles with EPF10 are available.

If you wear prescription glasses, consider adding a UV-protective coating or buying prescription sunglasses or protective shades that can be worn over glasses. Photochromatic (transition) lenses with UV radiation protection will change colour when you are in bright sunlight and stay clear indoors or at night. It is important to note that transition lenses don't work as well in cars because the windscreen and windows absorb

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some UV radiation, resulting in lower UV radiation levels.

Some contact lenses have built-in UV radiation protection. However, it is recommended that you still wear sunglasses over the top to protect the rest of the eye.

Children and sunglasses

Since eye damage from UV radiation builds over time, it is important to protect the eyes of children.

Sunglasses designed for babies and toddlers have soft elastic to keep them in place. It is important to choose a style that stays on securely so that the arms don't become a safety hazard.

Toy or fashion labelled glasses do not meet the requirements for sunglasses under the Australian Standard and therefore should not be used for sun protection.^{9, 11}

Some young children may be reluctant to wear sunglasses. You can still protect their eyes by putting on a broad-brimmed hat and staying in the shade.

Eye protection for outdoor workers

Some outdoor workers need protection from flying particles, dust, splashing materials and harmful gases. Safety glasses that meet the Australian Standard AS/NZS 1337:1992 (eye protectors for industrial applications) provide sun protection.

Eye protection in solariums

Goggles should always be worn in a solarium. If the eyes are exposed to UVA radiation from a solarium, the cornea and the conjunctiva may be briefly inflamed, and sight can sometimes be permanently damaged.

Solariums should never be used. They emit harmful levels of UV radiation that can be up to three times as strong as the midday summer sun. This is the equivalent of the UV Index being 36 (generally the highest UV Index level in Victoria is 12). The more skin is exposed to UV radiation from any source, the greater the risk of skin cancer.

Eye protection in sport

You can buy sunglasses designed to suit specific sports, including golf, cycling, cricket and sailing.

Further information and resources

Being SunSmart in Victoria information sheet and *Shade for Everyone: A Practical Guide for Shade Development* booklet.

Visit sunsmart.com.au or contact the Cancer Council Helpline on 13 11 20.

UV-protective clothing and accessories can be purchased at Cancer Council Victoria's shop or online at cancervic.org.au/store

Speak to an optometrist, ophthalmologist or doctor about how to protect your eyes from UV radiation.

For more tips on saving your sight, visit Vision 2020 Australia vision2020australia.org.au

References

- 1 Taylor H. Climatic droplet keratopathy and pterygium. *Australian Journal of Ophthalmology* 1981; 9:199–206.
- 2 Moran D, Hollows F. Pterygium and ultraviolet radiation: a positive correlation. *British Journal of Ophthalmology* 1984; 68: 343–6.
- 3 Roberts T, Coroneo M. Pterygium: the curse of the Australian sun lover. *Modern Medicine* 1999; September: 31–5.
- 4 Coroneo M. Pterygium as an early indicator of ultraviolet insolation: a hypothesis. *British Journal of Ophthalmology* 1993; 77: 734–9.
- 5 West S. et al. Sunlight exposure and risk of lens opacities in a population-based study. The Salisbury eye evaluation project. *JAMA* 1998; 280: 714–8.
- 6 Hollows F, Moran D. Cataract – the ultraviolet risk factor. *Lancet* 1981; ii: 1249–50.
- 7 Taylor H. The biological effects of UVB on the eye. *Photochemistry & Photobiology* 1989; 50: 489–92.
- 8 Vajdic CM, Krickler A, Giblin M, McKenzie J, Aitken J, Giles GG, Armstrong BK. Incidence of ocular melanoma in Australia from 1990 to 1998. *International Journal of Cancer*. 2003; 105(1):117–22.
- 9 Australian Standard AS 1067:2003 (Sunglasses and fashion spectacles).
- 10 Gies HP, Roy CR and Elliott G. A Proposed Protection Factor for Sunglasses. *Clinical & Experimental Optometry* 1990; 73: 184–9.
- 11 Choice. Eye Safety. Sunglasses. *Choice Magazine* 1999; October: 8–11.

This information is based on current available evidence at the time of review. It can be photocopied for distribution.

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