



# Sun protective clothing

To protect yourself from ultraviolet (UV) radiation damage, wear clothing that covers as much skin as possible.

For best protection during the daily sun protection times (when the UV is 3 and above) use all five SunSmart steps:

- Slip on clothing
- Slop on SPF30 (or higher) broad-spectrum, water-resistant sunscreen
- Slap on a hat
- Seek shade
- Slide on sunglasses.

The free SunSmart app tells you the sun protection times for your location and provides current UV levels. Sun protection times can also be found at the Bureau of Meteorology website and app and live UV levels are also available from ARPANSA.

## What should I look for when choosing sun-protective clothing?

Choose clothing that covers as much skin as possible.<sup>1</sup>

The best styles are:

- tops with collars, and sleeves of at least three-quarter to full-length
- pants or skirts of at least three-quarter to full-length.

## What is UPF?

Some clothing carries a tag with an ultraviolet protection factor (UPF) rating for sun protection. The UPF rating refers to both the design of the garment (how much skin it covers) and fabric (how much UV it blocks). Specific UPF guidelines have been developed by Standards

Australia under the Sun protective clothing standard (AS 4399:2020).

To claim a UPF rating, as a minimum, clothing should cover the upper body including the torso and 3/4 of the upper arms and/or the lower body. Lower body coverage should extend from the hip line to halfway down the thigh.<sup>2</sup>

The Australian Standard states that clothing designs incorporating full length sleeves, collars, crew necklines, long skirt or long trouser legs cover more body surface area thereby providing a more extensive physical barrier to UV (4.2.1).

The UPF rating also provides information on how much UV will pass through unstretched, dry material. There are only four UPF ratings for clothing – UPF15, 30, 50 or 50+. Material with a UPF rating of 30 would only allow 1/30th (3.3%) of UV falling on its surface to pass through it, blocking 96.7% of UV. Any fabric rated above UPF15 provides minimum protection against UV. UPF50 and UPF50+ (excellent protection) are recommended.

Some fabrics may have their rating improved by being specially treated.

UPF classifications AS 4399:2020		
UPF rating	UPF classification	% UV radiation blocked
15	Minimum protection	93.3%
30	Good protection	96.7%
50, 50+	Excellent protection	98%

## What fabrics are best?

Fabrics do not need to be UPF rated to provide protection. Try to choose fabric structures, colours and other characteristics that increase protection.

### Fabric structure

The tighter the fabric structure, whether knitted or woven, the better the sun protection.<sup>3</sup> As the fibres of tightly woven fabrics are closer together, less UV radiation is able to pass through to the skin. Tightly woven, lightweight natural fabrics such as linen, cotton or hemp will also help keep you cooler than synthetic fibre equivalents.

### Tension

If a fabric is stretched, it will be less protective. This is common in knitted or elasticised fabrics. Take care to select the correct size for the wearer or if wearing stretchy fabrics choose fabric structures and colours that provide greater protection to offset the effect of the stretch.

### Layering

Layering of fabrics and garments is an effective way to increase protection from UV.

### Colour

Many dyes absorb UV radiation. Darker colours (black, navy and dark red) of the same fabric type will absorb more UV radiation than light pastel shades (white, sky blue and light green).<sup>4</sup> Choose darker colours where possible. If you want to choose a light-coloured fabric, other choices such as fabric structure will become more important.

### Moisture content

Fabrics offer less protection from UV radiation when wet. The level of protection will depend on the type of fabric and the amount of moisture it absorbs. To reduce the effect of the moisture, take dry clothes to change into or if dipping in and out of the water, choose a fabric that provides effective protection from UV and that will dry quickly.

## Caring for your clothes

Washing new clothes can improve their sun protection, especially when made of natural fibres such as cotton, by shrinking gaps in the structure. However, old, threadbare or faded clothes may offer decreased protection over time.

### UV absorbers

Some clothing is treated so it can absorb more UV radiation. Check the clothing label to see if your clothes have been treated and ensure you follow the care instructions.

### More information and resources

Visit [sunsmart.com.au](http://sunsmart.com.au) or contact Cancer Council on 13 11 20.

UV-protective clothing and accessories can be purchased at Cancer Council Victoria's shop or online at [www.cancercouncilshop.org.au](http://www.cancercouncilshop.org.au).

### References

- 1 Gies P, Roy CR, McLennan A, Toomey S. Clothing and protection against solar UVR. *Journal of the Home Economics Institute of Australia* 1998; 5(2).
- 2 Standards Australia. Australian Standard AS 4399:2020 Sun protective clothing - Evaluation and classification, 17 April 2020.
- 3 Gies P. Photoprotection by clothing. *Photodermatology, Photoimmunology & Photomedicine* 2007; 23(6): 264–74.
- 4 Gies PH, Roy CR, Toomey S, McLennan A. Protection against solar ultraviolet radiation. *Mutat Res* 1998; 422(1): 15–22.

This information sheet is based on recommendations from the Australian Radiation Protection & Nuclear Safety Agency's (ARPANSA) Buyer's Guide for Sun Protection <https://www.arpansa.gov.au/our-services/testing-and-calibration/sun-protection-buyers-guide>

SunSmart appreciates the assistance in the development of this information sheet provided by Dr Cheryl Wilson, University of Otago <https://www.otago.ac.nz/materials/index.html>

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

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