

# Sun-protective clothing



To protect from ultraviolet (UV) damage, wear clothing that covers as much skin as possible, such as collared shirts, at least three-quarter length trousers and three-quarter sleeve tops.

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

- Slip on clothing
- Slop on SPF30 (or higher) broad-spectrum, water-resistant sunscreen
- Slap on a broad-brimmed 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 websites 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> Collared shirts and at least three-quarter-length trousers and three-quarter-sleeve tops cover skin well.

A shirt with long sleeves and a large collar offers much better protection than clothing that covers less of your body, such as singlet tops. Loose-fitting clothes give better protection than tight-fitting clothes and may be more comfortable to wear on hot days. Darker colours generally offer more protection than lighter colours.

## What is UPF?

Some clothing carries a tag with an ultraviolet protection factor (UPF) rating for sun protection. The UPF rating provides information on how much UV radiation will pass through unstretched, dry material.

For example, material with a UPF rating of 20 would only allow 1/20th (5 per cent) of the UV radiation falling on its surface to pass through it. This means that this material blocks 95 per cent of UV radiation.

The UPF rating doesn't refer to the design of the garment, just its material. Some fabrics may have their rating improved by being specially treated.

Any fabric rated above UPF15 provides good protection against UV radiation, but UPF50+ is recommended.

UPF Ratings and Protection Categories		
UPF Rating	Protection Category	% UV Radiation Blocked
15, 20	Good	93.3 – 95.9
25, 30, 35	Very Good	96.0 – 97.4
40, 45, 50, 50+	Excellent	97.5 or more

Source: Australian Radiation Protection and Nuclear Safety Agency April 2008

Fabrics do not need to be UPF rated to provide protection. Most fabrics will provide some protection from the sun.

## Which fabrics are best?

Try to choose fabric structures, colours and other characteristics that increase protection. If you want to choose a light-coloured fabric, other choices such as fabric structure will become more important.

### 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.



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## 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 if possible.

## Moisture content

Fabrics offer less protection from UV radiation when wet. How much less 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 the 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/Standards New Zealand. Australian/New Zealand Standard AS/NZS 4399 Sun protective clothing - Evaluation and classification Standards Australia/Standards New Zealand, 1996.
- 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 is based on current available evidence at the time of review. It can be photocopied for distribution.**

**This information sheet is based on recommendations from the Australian Radiation Protection & Nuclear Safety Agency's Resource Guide for UV Protective Products. The guide can be downloaded from [arpana.gov.au/uvrg](http://arpana.gov.au/uvrg). SunSmart appreciates the assistance in the development of this information sheet provided by Dr Cheryl Wilson, University of Otago [otago.ac.nz/textiles](http://otago.ac.nz/textiles)**

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