



Sun Protection using Clothing

There is well established evidence that exposure to ultraviolet radiation (UVR) from the sun can lead to skin cancer. Clothing is a very effective method of sun protection when used with a combination of other protective measures.

Health effects from solar UVR

ARPANSA and other national and international health authorities, including the World Health Organization have assessed that continuous exposure to ultraviolet radiation (UVR) from the sun causes harmful effects on the skin, eye and immune system.

The more skin you cover the better off you are as far as protecting yourself against sunburn, tanning and skin damage that can ultimately lead to skin cancer. Choosing clothing with collars and long sleeves and long pants is best. Clothing can provide consistent protection, particularly if it is Ultraviolet Protection Factor (UPF) rated, which allows consumers to make informed choices.

UPF rated clothing

Often sun protective clothing will have been tested and will have a UPF rating, which provides information on how much UVR will be blocked by the clothing. The current Australian/New Zealand Standard has three major protection categories shown in the table.

Never rely on clothing alone for sun protection. During the daily sun protection times (when the UV level is 3 and above) use a combination of the five sun protection measures. Covering up is important, particularly at places where there is little shade, such as the beach.

UPF ratings and protection categories

UPF Rating	Protection	% UVR Blocked
15, 20	Good	93.3 -95.9
25, 30, 35	Very Good	96.0 – 97.4
40, 45, 50, 50+	Excellent	more than 97.5



For further information visit SunSmart.com.au or call 13 11 20



What factors affect the amount of UV protection provided by clothing?

Most fabrics will provide some protection from the sun regardless of if they are UPF rated or not. A number of factors determine how effective clothing is at reducing the UV reaching the skin. These factors are as follows:

Weave Density. How much of the fabric is solid fibres and how much is space between the strands is important. The tighter the weave, the less space there is between the strands for the UVR to pass through.



Construction of the Fabric. Most fabrics are either woven or knitted and the construction determines whether the amount of open area in a fabric changes when tension is applied.

Fabric thickness. As fabric thickness increases, the measured protection increases.

Tension. Stretching a fabric will normally cause a decrease in the UPF rating as the spaces in the fabric open up.

Colour. In general darker colours and higher dye concentrations absorb more UVR than do lighter colours.

Additives. Some chemical compounds such as optical whitening agents and UV cutting agents can be added to fabrics to increase their UVR absorption, either when they are made or later as wash in additives.

Condition. Often the UV protection of garments increases after the first washing. However, eventually after numerous washes the garment will gradually fade and become threadbare with reduced UPF ratings.

Protection messages

The Cancer Council Australia provides further protective advice through national, state and territory Sunsmart programs and activities.

Links

World Health Organization – provides international advice on sun protection
www.who.int/uv/sun_protection/en/

Cancer Council Australia – provides advice on preventing cancer in Australia
www.cancer.org.au

Australian Standards - AS/NZS 4399:1996 Sun Protective Clothing – Evaluation and Classification
www.standards.org.au