

Personal protection

Clothing, hats, sunglasses and sunscreens



What is skin cancer?

Skin cancer is predominantly caused by overexposure to the sun's ultraviolet radiation (UVR).

There are three types of skin cancer.

Basal cell carcinoma (BCC):

BCCs are the most common but least dangerous form of skin cancer and the most easily treated. They are a malignant tumour formed in the basal cell layer of the skin (see figure A). They usually appear as a small, rounded lump with a pearly edge and a few visible blood vessels. Other symptoms include bleeding or a sore which will not heal. BCCs occur mainly in exposed areas such as the head and neck, upper trunk and the limbs.

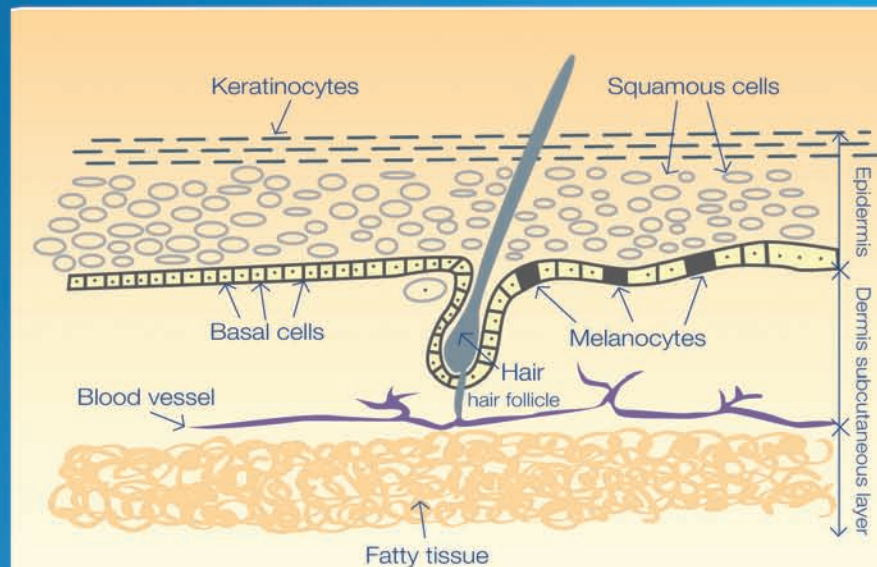
Squamous cell carcinoma (SCC):

SCCs arise from the cells above the basal layer of the epidermis (see figure A). They grow more rapidly than BCCs and may become larger over a number of months. SCCs usually appear as a flat, scaly area which gradually thickens. Bleeding and ulceration may occur and the area could feel tender. SCCs predominantly occur on the head and neck, hands and forearms, trunk and lower limbs. These cancers may spread (metastasise) to other parts of the body if not treated.

Malignant melanoma:

Melanoma is the rarest, yet most dangerous form of skin cancer. It can appear at any age and on any area of the body, not only those exposed to the sun. The first sign of a melanoma is usually a change in a freckle or mole, or the appearance of a new spot on normal skin. There may be a change in the size, shape or colour of a spot and the surface texture may change. Early detection is vital.

Skin structure



The function of the skin

The skin protects the inside of the body from outside dangers, such as the sun. Squamous cells are constantly being rubbed off the surface and replaced by new cells. The melanocytes produce more dark pigment (melanin) which partly protects the skin from too much sun. Many Australians, however, have fair skin which cannot produce the melanin required.

What is ultraviolet radiation?

There are three types of ultraviolet rays (see Figure B).

UVA

- Contributes to the development of skin cancer;
- Penetrates the top layer of the skin and damages the lower layer; and
- Causes premature ageing including roughening, blotchiness, wrinkling and looseness of the skin.

UVB

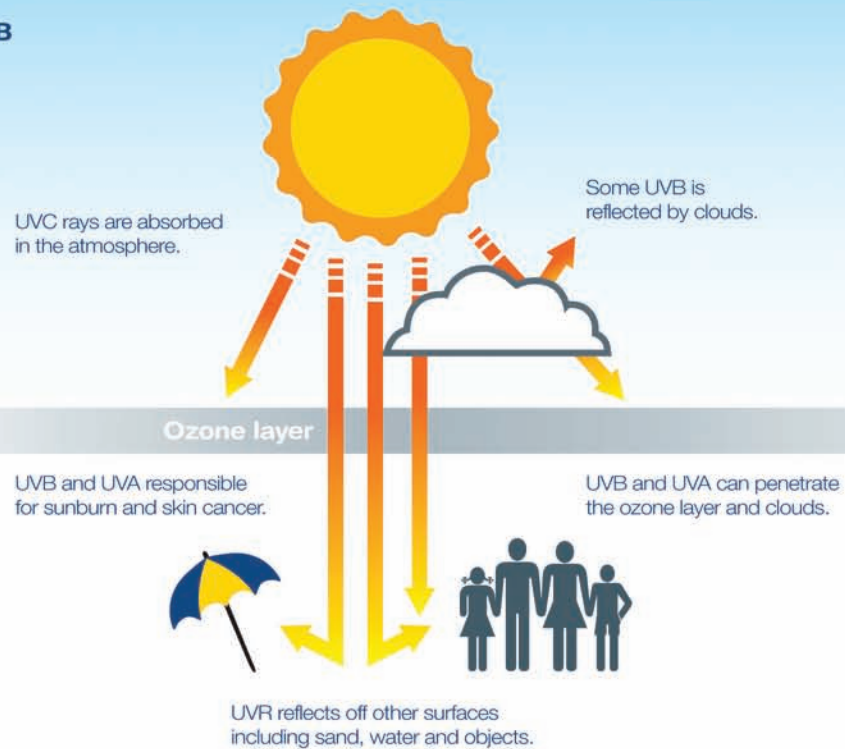
- Causes skin cancer and sunburn; and
- Damages the dermal structure of the skin along with UVA, thus contributing to general looseness and loss of the skin's elasticity.

UVC

- Is situated below the spectrum of sunlight which reaches the Earth and is absorbed by the ozone layer, thus does not reach the Earth. However UVC is artificially produced in arc welding.

How does UVR work?

Figure B



UV Alert

What is the SunSmart UV Alert?

The SunSmart UV Alert is a tool you can use to protect yourself from UV radiation. It tells you the time during the day you need to be SunSmart.

The SunSmart UV Alert times are issued throughout the year by the Bureau of Meteorology (BOM) when the UV Index is forecast to reach three or above. Above this level, UV radiation can cause damage to your skin and eyes which may lead to skin cancer. So whenever SunSmart UV Alert times apply, you need to use sun protection.

The SunSmart UV Alert is reported in the weather page of all major Australian daily newspapers, on the BOM website for over 300 locations across Australia, via pocket news on mobile phones and on some television and radio broadcasts.

It is based on the Global Solar UV index, a rating system adopted from the World Health Organization.

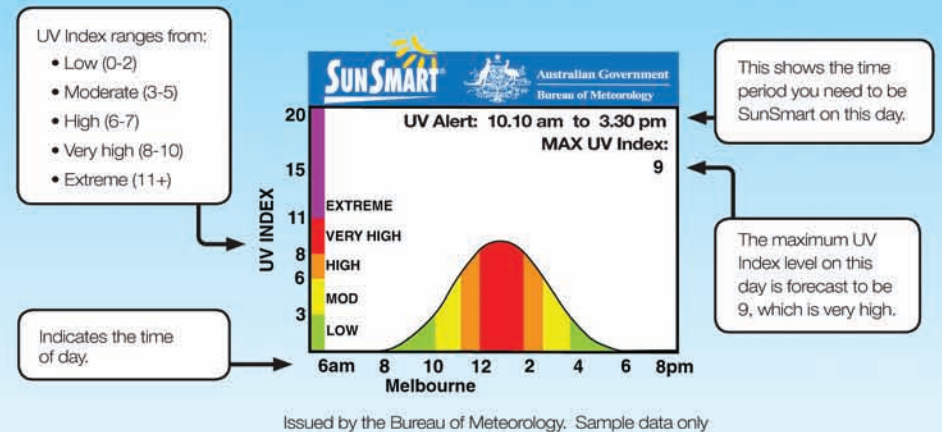
When should I use the SunSmart UV Alert?

Check for the SunSmart UV Alert times when:

- **Planning or participating in an outdoor activity or event.**
- **Involved in recreational activities such as running, swimming, cycling or team sports.**
- **Attending a spectator sport, such as tennis or cricket.**
- **Working outdoors, or having responsibility for outdoor workers.**
- **Responsible for children or adolescents and their outdoor activities.**

When SunSmart UV Alert times apply, you need to be SunSmart during the period indicated.

How to read the SunSmart UV alert



Personal protection

Avoiding overexposure to UVR is the best way to prevent skin cancer. Follow these simple steps:

- Minimise time in sun between 10am and 3pm.
- Slip on clothing.
- Slop on SPF 30+ sunscreen.
- Slap on a hat.
- Seek shade.
- Slide on sunglasses.
- Check the UV Alert daily.
- Avoid solariums. Solariums produce concentrated UVR. Solariums can emit UVR up to five times as strong as the midday summer sun.



Slip on clothing

Clothing provides an effective form of protection from the sun, providing it meets the following simple guidelines.

Dark colour

Fabrics that are dark in colour, such as greens, blues and reds are perfect for sun protection as they will inhibit ultraviolet light penetration and will reduce any reflection onto your exposed skin.

Close weave

Fabrics that have a close weave provide the best form of sun protection, as they block out most of the UVR. If you hold a garment to the light and see no light penetrating, your skin should be protected from sun damage. The more light that is visible, the less protection given by the fabric.

Style

Shirt – The style of your garment will indicate the amount of sun protection it provides. The arms and neck are common sites for skin cancer, so long sleeves and a collar will assist in reducing sun-induced skin damage.

Shorts – Long loose trousers or skirts are cool and will protect your legs. Long-style, baggy shorts are also suitable.

Swimming

Lycra products with a SunSmart design are an effective way to protect the skin while enjoying Queensland's beautiful climate. Apply the same rules for choosing SunSmart swimwear as you would for everyday clothing:

- Dark colour.
- Close weave.
- SunSmart style.
- Sleeves.
- High neck.
- Covering for legs.

Clothing UPF ratings

In addition to considering the weave, colour and style of a garment, choose fabric with a high ultraviolet protection factor (UPF). To make this easy, a UPF rating scheme has been developed and is outlined in the Australian/New Zealand Standard AS/NZS 4399:1996. A fabric's UPF rating is based on how much UVR is transmitted through the fabric and is an indicator of how much protection can be provided.

Table 1: Ultraviolet protection factor (UPF) categories in the current Australian Standard. Available UPF ratings by protection categories. (UPF ratings on clothing range from 15 to 50+.)

Protection category	UPF range	Rating
Excellent protection	45–50, 50+	40, 45, 50, 50+
Very good protection	25–39	25, 30, 35
Good protection	15–24	15–20

Clothing provides constant protection from UVR, whereas sunscreen will wear off and provides varying levels of protection depending on your skin type and application method.

The UPF rating of a garment is indicated on a swing tag attached to the garment. Make sure the tag acknowledges the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) and read the Cancer Council Australia message on the reverse of the tag. Sunscreen is recommended as the last line of defence in addition to shade, clothing, hats and sunglasses. Sunscreen should not be relied on as the sole form of sun protection.



Slop on sunscreen

When choosing a sunscreen look for the following:

- Sun protection factor (SPF) of 30+.
- Broad-spectrum.
- Water-resistant.
- Check the use by date.

What is sunscreen?

Sunscreens are chemical products which, when applied correctly, react with the skin and provide some protection from ultraviolet radiation.

How do sunscreens work?

Sunscreens are composed of elements which either act as physical blockers or chemical filters. Physical blockers such as titanium dioxide and zinc oxide work in two ways: they reflect the UVR as it reaches your skin and they absorb some UVR at a specific wavelength and convert that energy into heat energy.

Chemical filters work by absorbing the UVR as it reaches your skin, and counteract the UVR to reduce damage.

How should sunscreens be applied?

No sunscreen will work effectively unless it is applied correctly. This means it should be applied liberally to clean, dry skin at least 20 minutes before sun exposure and reapplied at least every two hours, or more regularly if swimming or perspiring. To apply liberally means about one teaspoon per limb.

What is SPF?

SPF stands for sun protection factor and is a laboratory measurement which indicates the amount of UVR protection the product will provide. The higher the SPF, the better the protection from UVR. The maximum SPF sunscreen sold in Australia is 30+, which will filter 96.7 per cent of UVR if correctly applied. The level of protection provided by a sunscreen varies and depends on many factors

including genetics, existing sun-induced skin damage and your skin type. These issues reinforce that sunscreens should not be regarded as the sole form of sun protection.

What does broad-spectrum mean?

When a sunscreen product is labelled as providing broad-spectrum protection, this means the product will protect against both UVA and UVB.

Why should I choose a water-resistant sunscreen?

An important consideration in the selection of a sunscreen is the water-resistance. Even though the product will help to protect your skin when immersed in water, it is vital to reapply the sunscreen after swimming and not rely on the product protecting your skin for extended periods of time. If you plan to be involved in swimming or water sports for an extended period of time, adopt other SunSmart tactics such as avoiding the middle of the day and wearing sun protective swimwear. A water-resistant sunscreen will also be more effective if you are perspiring heavily. However, do not rely on sunscreen for your total protection.

Why does sunscreen have a use by date?

Sunscreens should display a use by date. Over time, the chemicals contained in sunscreens will break down and not provide the amount of protection indicated. Sunscreens should be stored in a cool place (below 30°C).

What about cosmetics containing sunscreen?

Many cosmetic products now include an SPF rating on the label. This means sunscreen ingredients have been added to the base products to provide sun protection. These products are required to undergo the same strict testing procedures of any sunscreen product. It is important to note, however, that some of these products may not be broad-spectrum or water-resistant. This information will be included on the label. Also be aware some of these products do not have use by dates. Therefore, the SPF may break down after about three years from the manufacturing date.

Should sunscreen be used on babies?

Many sunscreen products indicate suitability for use on babies and children. There is no evidence to link the use of sunscreen on small areas of the baby's skin with any problems or long-term effects. For a small proportion of babies, like adults, some sunscreens can cause minor skin irritations, in which case it is recommended to try a product formulated for sensitive skin.

Babies should not be exposed to the sun. Keep babies out of the sun when the UV Index is above three and cover them with a protective hat, clothing and sunglasses. Sunscreen can be applied to small areas of the skin which cannot be covered by clothing, such as the face and back of the hands.

Slap on a hat

Colour

The colour under the brim is very important. If a hat is lined with a white fabric, this will cause a lot of reflection onto your exposed skin and your eyes. Many hats are lined with dark colours which reduces the amount of ultraviolet reflection.

Close weave

Like clothing fabric, the weave of the hat will determine the amount of ultraviolet radiation which is blocked. Hold the hat to the light and ensure no light can be seen. This will assist in ensuring maximum protection.

Hats can provide excellent protection for the head and face. Make sure you choose one of the following styles.

Style

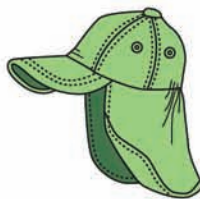
- **Broad brim**

Choose a hat with a broad brim of at least 7.5cm, which protects your face, neck and ears.



- **Legionnaire**

Legionnaire-style hats provide great protection to the face, neck and ears, but make sure the neck flap covers the ears.



- **Bucket hats**

Bucket hats have a deep crown and sit low on the head. The brim should be at least 6cm to provide plenty of protection from the sun.



- **Wrap hats**

This unique style of hat is becoming increasingly popular for activities such as boating and other outdoor activities. It provides lightweight, thorough protection which will not blow off in the wind.

- **Swimming hats**

Lycra legionnaire-style hats with a neck tie are widely available and popular with children for water activities. Lycra provides great sun protection and is lightweight.

Other Options

Safety helmet covers

Working outdoors in construction areas requires wearing a safety helmet. This equipment does not provide sun protection to the neck, ears and face. A safety helmet cover fits over the helmet and provides a brim and legionnaire flap to provide complete protection.

Bicycle helmet covers

Australian Government regulations require all cyclists to wear a bicycle helmet. This equipment usually offers no sun protection to the face, neck and ears. A bicycle helmet cover stretches over the helmet, or can fit underneath, creating a brim and legionnaire-style flap to provide adequate protection.

Seek shade

Seeking shade can reduce up to 75 per cent of your UVR exposure. Shade can be provided by trees, built shade structures or by portable means such as an umbrella or tent. Ensure that natural shade is established taking into consideration daily shade patterns, location, type of plant to suit the climate and seasons, watering and maintenance.

Built shade can have significant sun protection benefits because it can be permanent, adjustable or portable. Ensure that built shade also takes into consideration daily shade patterns, cost and maintenance.

Reflected UVR can still cause skin damage so don't forget to also use personal protection when seeking shade.

Slide on sunglasses

Eye protection is an important component of your SunSmart routine. Exposure to UVR is associated with both skin cancers on the eyelids and the development of degenerative changes on the eye surface.

Sunglasses sold in Australia must conform to the Australian Standard AS/NZS 1067:2003.

The standard means sunglasses must state:

- The Standard's number AS/NZS 1067:2003.
- Which category of sunglass they qualify for, such as general purpose or specific purpose.

If they do not comply with some of the colouration limits, they must have the appropriate qualifying clauses, for example, not suitable for driving.

Some sunglasses also include an eye protection factor (EPF) rating which relates to the sun protection offered. This is similar to SPF ratings on sunscreens or UPF ratings on clothing, yet ranges from one to 10 with the highest being EPF 10. This rating means it actually exceeds the requirements of the Australian Standard.

The style of the sunglasses indicates the amount of sun protection provided. A wrap around style is best as it will reduce UVR entering the eye from the side of the face. Make sure you can tilt your head forward without your sunglasses moving, as this will ensure greater comfort. It is important you choose sunglasses which are appropriate for their intended use.



For more information about the UV Index check out these websites:

SunSmart

www.sunsmart.com.au/uvalert

Bureau of Meteorology

www.bom.gov.au/weather/uv/

Australia Radiation Protection and Nuclear Safety Agency (ARPANSA)

www.arpansa.gov.au/uvindex/daily/ausuvindex.htm

World Health Organization

www.who.int/mediacentre/factsheets/fs271/en/

Remember

Sun damage and the risk of developing skin cancer is cumulative. So the more sun exposure over time, the more chance there is of developing skin cancer. Prevention is the key.

Check your skin regularly and if you notice a new spot, or one that changes shape, size, and/or colour, see your doctor. Call the Cancer Council Helpline on 13 11 20 for more information.

Cancer Council Queensland's SunSmart Shop stocks a variety of sun protective products. Call the SunSmart Shop on 1300 363 433 (toll free) or visit www.sunsmartshop.com.au

What about vitamin D?

Most Queenslanders only require a couple of minutes of sun exposure before 10am or after 3pm a couple of days a week. Usually you will receive enough vitamin D simply by engaging in typical weekly activities such as hanging out the washing, walking to and from the car or driving. Talk to your doctor if you are concerned about a vitamin D deficiency.



**For information and support call
Monday to Friday, 8am – 8pm**

Some photos courtesy of Queensland Health