

Sunburn is the skin's reaction to too much ultraviolet radiation (UVR ) in sunlight. You can see sunlight, you can feel heat (infrared radiation), but you can't see or feel UVR. It can damage your skin even on cool, cloudy days. In Australia, sunburn can occur in as little as 15 minutes for a fair skinned person. The skin turns red, usually within 2 to 6 hours, and not immediately. This means a burn will become more severe once it is noticed if measures are not taken to either get out of the sun or protect the skin from the sun with physical sun-blocks; e.g. hats, clothing. If sunscreen has been applied, but enough UVR has hit the skin to cause burning, putting more sunscreen on and remaining out in the sun will filter most new UVR, but those few percent of UVR going through the sunscreen will only result in further burning. Sunburn will continue to develop for 24 to 72 hours after the excess UVR exposure. It is often much more painful the day after exposure, than on the day of getting sunburnt.

**Symptoms of sunburn**

- Change in skin colour, ranging from pink to red and even purple
- Skin feels hot to the touch
- Pain, although perhaps not initially
- Swelling
- Fluid filled blisters that may itch and eventually break
- Broken blisters, which reveal more tender skin underneath, leading to more pain and risk of infection



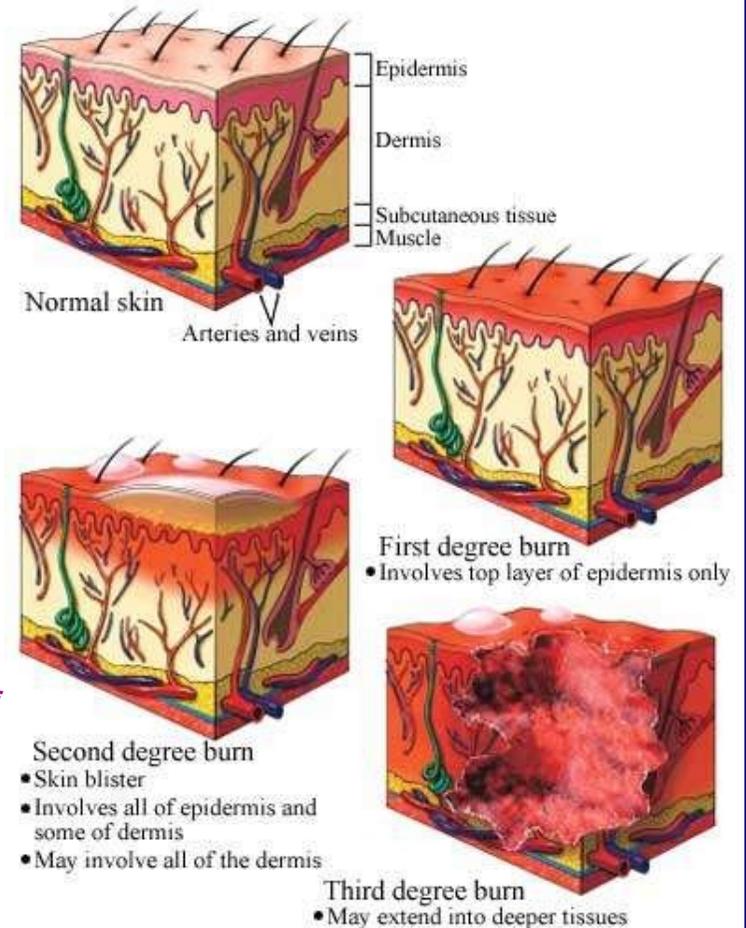
**What causes sunburn and why do we get it?**

UVB radiation affects the surface skin layer, causing the skin to release chemicals (inflammatory mediators) that dilate blood vessels. This causes fluid leakage and inflammation, which is seen in the redness and pain of sunburn. Some people will say they have windburn. The wind does not burn you - UV radiation does.

Sunburn can be grouped by seriousness:

- **First degree sunburn:** mild sunburn that reddens and inflames the skin
- **Second degree sunburn:** more serious reddening of the skin and blisters
- **Third degree sunburn:** requires prompt medical attention – bad blistering, headaches, nausea, vomiting, dizziness or altered states of consciousness, severe pain.

Please refer to the diagram (right) showing how each type of sunburn affects our skin layers



## Treatment/Management of Sunburn

*There is no cure for sunburn except time and patience. Treatment aims to help manage the symptoms while the body heals. Helpful things to do include:*

- Get out of the sun immediately sunburn is noticed
- Drink plenty of water, as dehydration will commonly occur with sunburn. Also consider rehydration formulas such as Hydralyte.
- Gently apply cool or cold compresses –e.g. wet towels or cloths
- Shower or bath in cold water – do not directly apply ice to the skin
- Consider anti inflammatory medications e.g. ibuprofen, as they may slow down the inflammatory effects due to the release of inflammatory mediators (as in any injury), and reduce pain.
- Consider hydrocortisone cream ONLY on the first day or night of sunburn. Again it may slow down inflammation, blistering and pain resulting from the burn, but only if used early. If used appropriately for bad sunburn the pain and blistering can be significantly less than may be expected. The ideal regimen is every hour, up to 4-5 times on the first day/night, starting as soon as possible. It is of no use the next day, and is never to be used on blisters or broken skin as it may increase the risk of infection.
- Pain permitting, moisturise the skin. Light, fragrance free moisturisers are best. They won't stop the burnt skin from peeling off, but will help boost the moisture content of the skin underneath, promoting healing. ALOE VERA gels or sprays are commonly used, although there is not a lot of evidence that aloe vera products work better than any other moisturisers. At least, if there is some benefit to healing from aloe, it is best to use a product with more aloe vera in it; e.g. Thursday Plantation aloe gel. It feels nice, and may have some benefits if the gel, spray or moisturising lotion is kept in the refrigerator. Using moisturisers until all peeling etc has gone is sensible to stop the new skin from drying out.
- Local anaesthetics e.g. Paxyl spray, may have some pain relieving ability, but they need to be rubbed into the skin to reach nerve endings to be effective. They are of no use if simply sprayed onto the skin.

Cooling sprays, e.g. Solarcaine. The “magic spray” effect of sport first aid leg-end. The immediate cooling sensation helps sooth the frantic (great for kids), but does not do anything more, and is short term relief. The anaesthetic in Solarcaine is Benzocaine ,which will require massaging into the skin for its pain relieving effect to be achieved —so spray ,then massage .

Avoid using soap, as this may irritate the skin. Use soap free alternatives; e.g. Cetaphil or Pinetarsol .

Avoid rubbing the skin, as further inflammation may result. Pat dry with towels after bathing.

DO NOT pop any blisters, as this opens the skin to infection and increases the pain.

Use antiseptics on broken skin and blisters. Paxyl spray contains cetrimide, an antiseptic , and Solarcaine contains another called triclosan .

Hydrogels (such as Solosite) provide moisture for effective wound healing and help to reduce scarring.



## Peeling Skin

Damaged skin cells will die and peel off. This is part of the natural healing process, possibly shedding cells that may have their DNA damaged enough to turn cancerous. There are no creams or lotions that will stop burnt skin from peeling off. Generally the skin will start to itch after about 4 or 5 days, due to the rapid growth of new skin cells to replace the top layers. Then from days 5 to 7 the top layers will start to peel .

It is important to resist the temptation to pick at the skin, as more skin than intended will be ripped off. This will open the skin up to infection and cause further pain. Antiseptic creams are helpful to prevent secondary infection.

Some people with sunburn will tell you that it is ok, and that they will be brown tomorrow. They may be browner, due to tanning of melanin already present in the skin, but in 5-7 days their new brown skin will peel off!



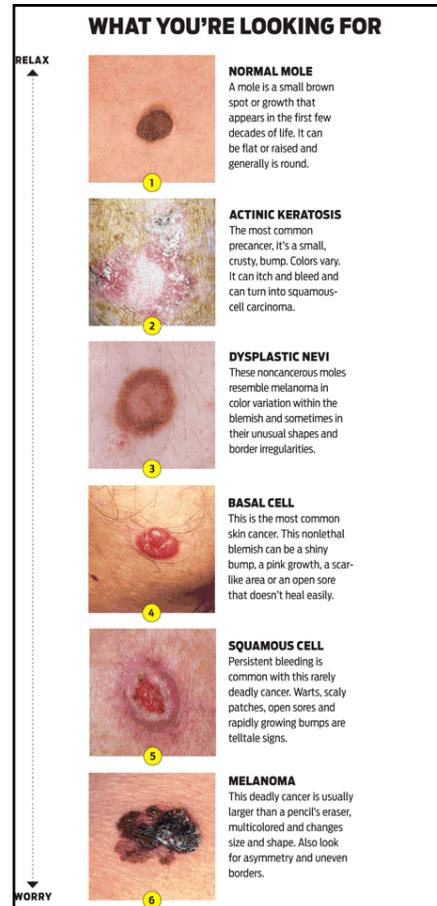
Examples of peeling skin after being sunburnt



## Long Term Effects of Sunburn

Sunburn at any age, whether serious or mild, can cause permanent and irreversible skin damage that can lay the groundwork for skin cancer later in life. A history of severe sunburns, particularly in childhood, is linked with melanoma – the most serious type of skin cancer.

Your lifetime tally of UVR exposure, together with the number of severe sunburns, especially during childhood, increases your risk of all skin cancers. Every year 1600 Australians die from skin cancer, and a much greater number get treated for it. The long term effects of repeated bouts of sunburn also include premature wrinkling.



## Prevention

Clearly, using the 5 protective methods (Clothing, 30+ or 50 + sunscreen, hats, sunglasses and seeking shade) is the best way to avoid sunburn. Unfortunately, this does not always happen.

[See "sun protection" for further useful information.](#)

