
Skin cancer - tanning

Summary

- Having a tan is still popular, especially among younger Australians.
 - Fake tanning' lotions may provide a safer way to change the tone of your skin, but they do not usually offer sun protection.
 - UV radiation causes skin and eye damage and increases your risk of skin cancer.
 - A tan is a sign that your skin has been damaged by too much exposure to UV.
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A tan is a sign that your skin is trying to protect itself from the sun's ultraviolet (UV) radiation. It is a sign of skin damage, not a sign of good health.

There is no such thing as a 'safe' tan. Exposure to UV radiation from the sun (or a solarium) increases your risk of skin cancer and ages your skin. In fact, 80 per cent of fine lines and wrinkles are due to UV exposure.

People with fair skin are at greater risk of skin cancer than those with naturally very dark skin.

Many people mistakenly believe that having a tan protects their skin against sunburn and UV damage. In fact, a tan offers little protection against sunburn (equal to around SPF 3, depending on your skin type). A tan will not protect your DNA from future UV damage.

Fake tanning lotions, sprays and creams offer little to no protection from the sun's UV radiation. Some brands advertise that they include a high SPF sunscreen. This UV protection does not last for as long as the fake tan, so sun protection is still recommended even if you have used a fake tan.

For the best sun protection, whenever UV levels are 3 or above:

- wear sun protective clothing
- apply SPF 30 or higher, broad spectrum, water-resistant sunscreen 20 minutes before going outside, and reapply every two hours, or more if swimming, sweating or towel drying
- wear a broad-brimmed, bucket or legionnaire style hat
- wear sunglasses, and
- seek shade.

How skin tans

Skin cells in the top layer of skin produce a pigment called melanin, which gives skin its natural colour. When skin is exposed to UV radiation, more melanin is produced, causing the skin to darken. This is what we know as a 'tan'. A tan is a sign that the skin has been damaged by UV radiation. It is not a sign of good health.

There is no 'safe' tan. Any tanning method that exposes the skin to UV radiation will cause skin damage. The more your skin is exposed to UV radiation, the greater your risk of skin cancer and the quicker your skin will age.

Compare the skin on the back of your hand with that on the inside of your thigh. This shows the damage caused by years of sun exposure.

Australians and tanning

The desire for a tan has been part of the Australian culture since the mid-1900s. But exposing skin to UV radiation increases the risk of developing skin cancer.

Australians are exposed to some of the highest levels of UV radiation in the world. Australia also has one of the highest rates of skin cancer in the world. Two in three Australians develop some form of skin cancer before they reach age 70. About 2,000 Australians die from skin cancer each year.

Challenging the tan beauty myth

Public awareness campaigns have challenged the idea that tanned skin is more desirable than pale skin. While there have been improvements, the desire for tanned skin still exists, especially among younger people.

As a result, alternative tanning methods have become more popular. If you choose to use an alternative tanning product, remember, you still need to use sun protection.

Tanning products and sun protection

A few tanning lotions include sunscreens, ranging from SPF 4 to 15. As with other sunscreens, these provide protection for up to two hours after application. Protection does not last for the length of the tan.

Cancer Council recommends using a sunscreen that is SPF 30 or higher. Reapply sunscreen every two hours. Remember to use it together with other sun protection measures:

- clothing
- broad-brimmed hat
- shade
- sunglasses.

Types of tanning products

The range of tanning products available includes:

- **topical dyes** – tanning lotions, creams, sprays, mousses, combined moisturiser and 'fake tan' products. These are generally made from vegetable dyes that stain the skin a darker colour. This gives a temporary appearance of a tan, which is why it is referred to as a 'fake tan'. This colour does not stimulate the production of melanin, nor does it provide protection against UV radiation. The dye is shed, along with dead skin cells, after a few days
- **bronzers and tinted sunscreens** – tinted cosmetic and sun protection products such as moisturisers, foundation, powders and sunscreen. Bronzers provide the skin with temporary colour that, unlike dyes, washes off with soap and water
- **tan accelerators** – claim to speed up the natural tanning process by stimulating melanin production in the body. They come in tablet, injection or lotion form. Using tan accelerators for a long time has been associated with an increased risk of skin cancer. When taken by mouth, the possible side effects of tan accelerator products include nausea, headaches and itchy skin
- **spray tanning booths** – these use mist spray guns to apply an even coat of fake tan solution to all, or parts of, the body. They are often found at beauty salons, hairdressers and some gymnasiums.

Tanning product risks

It is recommended that people avoid use of UV radiation to get a tan. But using fake tanning products comes with some health risks too.

Tanning products and dihydroxyacetone (DHA)

Fake tan products usually contain three to five per cent of a substance known as dihydroxyacetone (DHA). Professional products can have up to 15 per cent DHA. Lower concentrations of DHA produce a light tan. Higher concentrations of DHA produce a darker tan.

DHA is considered safe for topical application to the skin. But there is no conclusive evidence that it is safe to expose your eyes, lips, mucous membranes or internal organs to DHA.

While there is no absolute evidence that spray tans are harmful to humans, recent research has shown that DHA could be harmful if inhaled.

If you are getting a spray tan, make sure you are in a well-ventilated area, not a confined space. Wear goggles and a protective mask.

Tan accelerators

Tan accelerators are available in tablet, injection or lotion form. These products contain the chemicals psoralen and tyrosine, among others. These chemicals contribute to the production of melanin, the pigment responsible for skin colour.

With sensitised melanin cells, it is possible to get a suntan in a shorter time than usual. But these products don't provide any sun protection.

There is no evidence that the topical use of tyrosine has any effect on melanin cells. When applied to the skin, tan accelerator products can cause painful blistering.

Psoralen should only be used under medical supervision to treat skin problems such as psoriasis.

Using tan accelerators for a long time has been found to increase the risk of skin cancer. When taken by mouth, the possible side effects of tan accelerator products include nausea, headaches and itchy skin.

Tanning injections ('Melanotan')

Melanotan is a type of tanning injection. It stimulates production of melanin, the pigment that gives your skin its colour. This gives skin a tanned appearance.

Melanotan is generally bought from overseas websites. It is banned in Australia unless you have a prescription from a doctor in Australia. The **Therapeutic Goods Administration (TGA) advises against using Melanotan**. It has not been tested to Australia's rigorous standards and the long-term side effects are unknown. Also, self-injecting any substance risks serious infection.

If you, or someone you know is using Melanotan, the TGA recommends stopping and taking the rest to a pharmacy for safe disposal.

A solarium tan is not a safe tan

Due to the associated health risks, commercial solariums were banned in Victoria in January 2015. Before the ban, it was estimated that each year in Australia solarium use led to:

- 281 new melanoma cases
- 43 melanoma-related deaths, and
- 2,572 new cases of squamous cell carcinoma.

Solariums (also known as sunbeds, sunlamps or tanning beds) use UV radiation to tan the skin. They emit stronger ultraviolet (UV) radiation levels than the sun (up to six times as strong as the midday summer sun). This means they can damage your skin even faster than UV from the sun, and lead to cancer.

Solarium tans offer no protection against DNA damage to skin cells, which can occur without any visible signs of skin damage.

The International Agency for Research on Cancer has put UV-emitting tanning beds in its highest cancer risk category. Tobacco and asbestos are also in this category.

Solariums can cause:

- eye damage
- immediate skin damage (such as sunburn, irritation, redness and swelling)
- possible immune system changes.

They also increase your risk of skin cancer.

Research shows that people who use a solarium before the age of 35 have a 59 per cent greater risk of melanoma than those who do not use solariums. Using a solarium also increases the risk of developing squamous

cell carcinoma by 67 per cent and basal cell carcinoma by 29 per cent, when compared to people who have never used a solarium.

Where to get help

- Your **GP (doctor)**
- **Pharmacist**
- **Dermatologist**
- **Cancer Council** Tel. **13 11 20** for information and support
- **Cancer Council Victoria – Phone support in your own language** Tel. **13 14 50**

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