DermNet NZ

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Sunbeds and solaria

What are sunbeds and solaria?

Sunbeds and solaria are artificial tanning devices used to tan or darken skin. A solarium is specifically an enclosed sunbed that has light tubes that emit radiation from above and below. Other tanning devices include portable sun lamps that are positioned in front of or angled over your skin.

How do artificial tanning devices work?

In the same way that the sun emits ultraviolet (UV) radiation, artificial tanning devices such as sunbeds and sunlamps also emit UV radiation. The only difference is that the specific type and quantity of UV radiation produced from an artificial tanning device can be controlled. Most devices emit mainly UVA radiation, which is thought to be the least damaging of the UV radiation spectrum. Even though it is well known that excessive exposure to UVB radiation can lead to the development of skin cancers, some sunbed manufacturers are producing lamps that emit higher levels of UVB to mimic the sun's UV radiation spectrum and speed the tanning process. Some sunbeds emit UV radiation five times the strength of the midday summer sun. The introduction of "fast tanning" or "10 minute" devices is highly unsafe as they emit dangerously high doses of UV radiation.

Are sunbeds safe to use?

In the heydays of artificial tanning in the 1970-80's, artificial tanning devices claimed to be an effective, quick and harmless alternative to sunlight to achieve the then fashionable bronzed healthy look. Nowadays, there is good evidence that tanning, whether by sunlight or sunbed, can lead to skin cancer and skin ageing. In an 8-year study of more than 100,000 Scandinavians, it has been found that people who visit tanning clinics on one or more occasions per month are 55% more likely to develop melanoma.

Exposure to both UVA and UVB radiation has been linked with an increased risk of skin cancers. The link between skin cancer and UV radiation exposure is quite simple – the greater the exposure to UV radiation, the greater the likelihood of developing skin cancer and the more quickly the skin will age. For further information on the effects that UVA and UVB have on skin, see page on sunburn.

The only time an artificial tanning device should be used is in the medical procedure of phototherapy. This process of exposing the body to UV radiation is useful in the treatment of a number of skin conditions, including psoriasis and dermatitis. These treatments should only be conducted under medical supervision.

What regulations are there governing the use of sunbeds?

In most countries around the world, including New Zealand, the tanning clinic business is a largely unregulated industry. There is no mandatory training for people operating tanning clinics. In addition, there is no requirement for equipment to be checked or serviced regularly. This poses a huge risk to people who continue to use tanning clinics. The World Health Organisation (WHO) encourages governments to formulate and enforce effective laws governing the use of tanning devices.

Currently a standard on the operation of tanning clinics, shared by New Zealand and Australia, is being updated. One problem is that in New Zealand compliance with this standard is voluntary.

What are the myths surrounding the use of sunbeds?

There are many myths surrounding the use of tanning devices, some of which are dispelled below.

- *Sunbathing or using a sunbed will help to build up proc supplies.* Most people get sufficient vitamin D from their diet and from incidental exposure to sunlight during their day to day routine. Seek medical advice if you have concerns about not getting enough.
- *Getting a tan from a sunbed will provide good skin protection against sunburn on a sunny holiday.* A tan from a sunbed only provides very limited protection against the effects of sun exposure. It has been estimated that a tan only offers the same protective effect as using a SPF2 sunscreen.
- *I won't get skin cancer and premature ageing of the skin if I get a tan but don't burn.* UVA, unlike UVB, does not cause the early signs of sunburn but it does penetrate into the lower layers of the skin and induce its premature ageing, which can manifest as roughening, blotchiness, and wrinkling. UVA also suppresses the skin's immune system, which may play a role in the development of skin cancers. Thus you can still develop skin cancers many years later even if you don't get obvious sunburn.
- *I've been told that sunbed use may help prevent the onset or retard the growth of breast cancer, prostate cancer, colon cancer, osteoporosis and other diseases.* There is no scientific evidence in humans to indicate that sunbed usage lowers the chance of developing cancers or other diseases.

Related information

References:

- Sunbeds - questions and answers. Cancer Society of New Zealand Inc. June 2004
- Sunbeds, tanning and UV exposure. WHO Fact Sheet No. 287 March 2005
- Standards New Zealand. AS/NZS 2635:2002. Solaria for cosmetic purposes. Sets out requirements for installing, maintaining and operating solaria for cosmetic purposes.

On DermNet NZ:

- Sunburn
- Sun protection

Other websites:

Books about skin diseases:

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DermNet does not provide an on-line consultation service.
If you have any concerns with your skin or its treatment, see a dermatologist for advice.