

### SOLARIUMS

All forms of ultraviolet radiation contribute to skin cancer<sup>1</sup>, and a solarium tan is induced by ultraviolet radiation. Therefore, The Australasian College of Dermatologists, The Cancer Council Australia and its affiliated member organisations and the Cancer Society of New Zealand do not support cosmetic tanning in solariums under any circumstance.

#### RECOMMENDATIONS

1. The general public be informed of the risks associated with solarium use.
2. State and national governments be encouraged to consider the implementation of legislation to: ensure customers are adequately informed of the health risks; ban unsupervised solariums; and enforce age restrictions according to the Australian/New Zealand Standard AS/NZS2636:2002.

#### INTRODUCTION

The desire to acquire a tan for fashion or cosmetic purposes has led to the development of a large solarium industry in Australia and New Zealand.

Solariums emit ultraviolet UV-A and UV-B radiation, both known causes of skin cancer. In general, solariums predominantly emit UV-A, however in recent years, solariums have been manufactured to produce higher levels of UV-B to mimic the solar spectrum and higher levels of UV radiation intensity to speed the tanning process. There is good evidence to suggest that a small dose of UV-B used in conjunction with the high dose of UV-A as used in solariums is a cause of skin cancer.

Overexposure to ultraviolet (UV) radiation from the sun and artificial sources is of considerable public health concern. UV radiation plays an important role in the development of skin cancer, cataracts and other eye conditions, and suppresses the immune system. Cumulative UV radiation also results in premature skin ageing. **For this reason, The Cancer Council Australia, the Cancer Society of New Zealand and the Australasian College of Dermatologists does not recommend the use of UV tanning devices for cosmetic purposes.**

It is recognised however, that while solariums continue to be available to the public, there is a need for guidelines to reduce the risks associated with their use.

#### THE ASSOCIATION OF SOLARIUM USE WITH SKIN CANCER, SKIN AGEING AND EYE DAMAGE

Adverse health affects associated with sun exposure such as skin cancer and premature skin ageing have been well documented in international and national reports (NRPB 2002<sup>1</sup>, IARC 1992<sup>2</sup> and WHO 1994<sup>3</sup>) and peer reviewed medical journals.

The relationship however between solarium exposure and adverse health effects are documented below.

### **Skin cancers**

It is not always easy to implicate artificial tanning devices as a primary cause of skin cancer. There is increasing evidence however from both experimental and epidemiological data that cumulative exposure to UV radiation increases the risk of skin cancers. Therefore the added exposure from UV radiation tanning appliances such as solariums is likely to add to the well-known detrimental consequences of natural solar exposure<sup>4</sup>. There is no evidence to suggest that any type of solarium is less harmful than natural sun exposure.

Those who will be at the highest risk of skin cancer later in life are people who have fair skin which always burns and never tans,<sup>5,6</sup> and those under the age of 15 who have received large doses of ultraviolet radiation<sup>7</sup>. As per the Australasian Standard, it is recommended therefore that those under the age of 15 be banned from solariums and those aged 15 to 18 use a solarium only with parental consent.

Pre-cancerous actinic keratoses and Bowen's disease have also been reported in the sunlight-protected but solarium-exposed skin of fair-skinned users after just two to three years of regular solarium use<sup>8</sup>.

### **Skin ageing**

Ultraviolet light such as from a solarium causes premature ageing of the skin. This may be evident as increased skin wrinkling, irregular pigmentation and altered skin texture (photoageing)<sup>9,10,11,12</sup>. Photoageing includes wrinkling and loss of skin elasticity. It is generally irreversible without cosmetic surgery.

### **Eye damage**

Acute effects of UV radiation on the eye include photokeratitis (inflammation of the cornea and the iris), and photoconjunctivitis (an inflammation of the conjunctiva, the membrane that lines the inside of the eyelids and white of the eye). Long-term effects of UV radiation exposure of the eye may include the development of cataracts, pterygium (white or creamy opaque growth attached to the cornea), and squamous cell cancer of the conjunctiva.

## **OTHER FACTORS THAT ARE RELEVANT TO SOLARIUM USERS**

- No solarium can give a safe tan<sup>13</sup>.
- Artificial ultraviolet radiation exposure such as from a solarium is not necessary for optimal vitamin D production in Australia or New Zealand<sup>14</sup>.
- Solariums may emit much higher concentrations of ultraviolet radiation than the sun<sup>15</sup>.
- The Australian Consumer and Competition Commission (ACCC) has issued a finding that all solarium operators have a duty of care to ensure solarium patrons are aware of the above risks involved with solarium use.

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## REFERENCES

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