

# British Photodermatology Group Position statement

## Skin Photoprotection

### Background

Excessive exposure to ultraviolet radiation (UVR), particularly from a young age, is the main cause of melanoma and non-melanoma skin cancer [1], and also skin ageing. Exposure causing sunburn is most harmful, but frequent non-burning exposures are also damaging [2]. People with fair skin that burns easily, many moles or freckles, red or fair hair and light coloured eyes are most at risk. Ethnically darker skin is mostly just at risk of skin ageing. UVR exposure both naturally from sunlight and artificially from sunbeds [3] is damaging, and with the latter there is the additional concern that skin protection from exposure is never used.

Reducing UVR skin exposure lowers the risk of skin cancer [4,5] and ageing. Absolute sun avoidance is not advocated, however, as casual brief sun exposure, well below that leading to burning, helps maintain bodily vitamin D sufficiency [6]. Subjects in whom such exposure for medical or other reasons is contraindicated or impracticable, however, can successfully maintain vitamin D sufficiency through oral supplementation.

Education can change behaviour [7]. School based educational interventions have been shown to raise children's knowledge and awareness of sun safety [8]. Thus, promotion of sun safety in schools, particularly at primary school age when behaviour is most likely to be influenced, is expected to lead to long-term reduction in skin cancer incidence [9].

The most reliable means of minimising UVR skin damage is to limit sun exposure from 11am to 3pm to short periods, such as burning is avoided, during warm weather from April to September in the UK and year-round in tropical areas and to avoid sunbed use. UVR exposure is significantly increased at high altitude and after reflection from snow, white sand and white concrete. Cloud cover is very poorly protective, unless very dense, while swimming in water of any temperature or exposure to a cooling breeze offers no protection.

If significant outdoor exposure is necessary at these times, protection from deep shade such as from trees and buildings should be used whenever available and as much clothing cover as reasonable should be worn. A wide-brimmed hat protecting face, neck and ears and close-weave, loose-fitting clothing are required. Specially designed fabrics providing a high ultraviolet protection factor (UPF) are available [10].

For areas of skin unable to be protected by clothing, sunscreen use can be reasonably effective, but only if applied relatively thickly, which is generally not how they are used in practice. For greatest efficacy, a high sun protection factor (SPF) sunscreen, preferably of 30 or more, also providing high levels of UVA protection (preferably of at least 4\* in the Boots UK Limited system, or as usually otherwise indicated on the container) should be used. Applications should be made liberally to all uncovered areas 15-30 minutes before exposure, then again 15-30 minutes after exposure begins [11]. Repeat application preferably every couple of hours or so is necessary for most reliable efficacy, though many modern sunscreens can remain effective for much longer. Repeat application is also required after swimming or exercise and sweating [11]. Sunscreens should not be used to stay outside longer, as they lead to increased UVR damage if used carelessly [12], often giving protection less than a third of that stated [13].

Fake tan products are harmless and may be used as cosmetically required to give the skin a tanned appearance. They provide very low levels of protection against UVR exposure, so should not be relied on for sun protection.

Some people take medications or suffer from conditions that make them particularly sensitive to light (photosensitivity). Such individuals may need special, medically recommended photoprotective advice and treatment.

## **Recommendations**

- Sunbeds should not be used as they significantly increase the risk of skin cancer, especially as always used without photoprotection. In particular, sunbed use before a sunny holiday results in UVR damage without giving any significant protection against subsequent natural sun exposure.
- In tropical areas and during periods of warm weather from April to September in temperate areas, sun-exposure should be limited to short durations, such that burning is avoided.
- If significant exposure is necessary at these times, then behavioural sun avoidance, use of hats and clothing and liberal application of high SPF/UVA protective sunscreens should be used.
- Sunscreens should not be used to stay outside longer or just to avoid more reliable protective measures such as clothing and shade.

## **Additional recommendations for schools and other childcare facilities**

- Schools/ childcare facilities should be aware of the “SunSmart” school resources [14] and minimise the risks of sunburn in children. Staff should act as positive role models.
- Educational activities to promote and sustain sun awareness should be part of the school curriculum. This should be balanced, appropriate to the level of individual risk and should not discourage outdoor activities, which have known benefits such as physical activity and vitamin D synthesis.
- Children with black skin do not routinely require sunscreen and should have sufficient UV exposure to allow adequate vitamin D synthesis.
- Environmental shade should be accessible for all children
- Teachers should be aware that occasionally an individual child may be particularly at risk of adverse effects on health through sun exposure (through a photosensitivity disease/ increased risk of skin cancer) and should allow for their special needs with regards to photoprotection.

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**PRODUCED JANUARY 2013**  
**UPDATED SEPTEMBER 2016**

**REVIEW DATE SEPTEMBER 2019**

