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## Sun protection — Do we know enough?

Ashish Magdum <sup>a,\*</sup>, Francesca Leonforte <sup>b</sup>, Edwina McNaughton <sup>b</sup>, Jong Kim <sup>a</sup>,  
Tejal Patel <sup>c</sup>, Richard Haywood <sup>a</sup>

<sup>a</sup> Department of Plastic Surgery, Norfolk and Norwich University Hospital, Colney Lane, Norwich NR4 7UY, United Kingdom

<sup>b</sup> Norwich Medical School, University of East Anglia, Norwich NR4 7TJ, United Kingdom

<sup>c</sup> Doncaster Royal Infirmary, Armthorpe Road, Doncaster DN2 5LT, United Kingdom

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### KEYWORDS

Sunscreen;  
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**Summary** *Introduction:* Sun protection, particularly the appropriate use of sunscreens is an important modifiable risk factor in the prevention of skin cancers. Our aim was to assess the current knowledge levels regarding sun protection, across plastic surgeons in the UK.

*Methods:* A 12-point questionnaire based on the points contained in the patient information packs on sun protection produced by the British Association of Dermatology was circulated electronically amongst 551 BAPRAS members. We received 73 responses (13.3%). Questions were formulated around the basic information patients would expect to receive from a skin cancer specialist at the time of the diagnosis.

*Results:* On average, participants could answer only 52.4% of the questions correctly. Only 9.7% (95% CI 3–17) of participants could accurately quantify the role of UV exposure in causation of melanoma. A total of 37.5% correctly identified the duration of action of sunscreen to be 3–4 h. Half of the participants were not aware that geographical conditions like altitude and latitude, as well as shade, could alter sun protection. A similar number could not answer questions related to the protective action of clothing.

*Conclusion:* As principal stakeholders in the treatment and outcomes of skin cancer patients, plastic surgeons could be at the forefront of influencing patients' behaviour regarding sun protection measures. The results demonstrate a need for better awareness and education regarding the knowledge of sunscreens and UV protection. Improved education would lead to health benefits for patients and their relatives and influence the primary prevention of this enlarging health issue of skin cancer.

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\* Corresponding author. Department of Plastic Surgery, West Block, Norfolk and Norwich University Hospital, Colney Lane, Norwich NR4 7UY, United Kingdom. Tel.: +44 (0) 01603 286286x4485.

E-mail address: ashish\_magdum@yahoo.com (A. Magdum).

## Introduction

Recent changes in the law banning under 18s from using sun beds in England and Wales<sup>1</sup> acknowledges the recognition of skin cancers as a major public health problem. Whilst the pathogenesis of skin cancer is multi-factorial, UV exposure is a major contributing factor.<sup>2</sup> Squamous cell carcinomas (SCC) are directly related to chronic UV exposure over a lifetime and cutaneous melanoma seems to be related more to intermittent exposure.<sup>3</sup> The relationship of basal cell carcinomas with UV exposure is not uniform and intermittent UV exposure is shown to carry a slightly higher risk than that observed with chronic exposure.<sup>4,5</sup>

Studies have shown that educational interventions, particularly in the younger population, impacts on short-term behaviour with regards to use of sun protection and therefore on long-term outcomes.<sup>6,7</sup> Despite this, providing advice regarding sun protection measures remains a low priority amongst clinicians, even in relevant clinical settings and patients often have to rely on exaggerated and often inaccurate information available in the media.

A plastic and reconstructive surgeon's major workload comes from diagnosing and treating melanoma and non-melanoma skin cancers. As clinicians, plastic surgeons are particularly well-placed to be at the forefront of educating

patients and their relatives with simple risk modification strategies, such as the correct use of sunscreen and thus influence this escalating problem. However, while there is an expectation that plastic surgeons will know enough to give accurate advice regarding sun protection strategies to patients, there are no written guidelines on how much a plastic surgeon or any other health professional should know about sun protection measures. This study aimed to assess whether the plastic surgeons have the required knowledge of sun protection measures to be able to educate patients in a clinical setting.

## Methods

An anonymous, voluntary, online 12-point questionnaire survey (Table 1) incorporating the salient points contained in the patient information packs on sun protection produced by the British Association of Dermatology was designed in consultation with a dermatologist. (Table 2).

An approval was sought for this project from the Clinical Audit department of the Norfolk and Norwich University Hospitals NHS Foundation Trust. The BAPRAS Chair of Education and Research Committees approved the distribution of this questionnaire to its fellow members (Table 3).

**Table 1** An online questionnaire was sent out to assess knowledge about sunscreens and UV protection.

Question	Choice of answer			
1. How would you rate the increase in risk of melanoma due to UV exposure?	Nil	1–2 fold	8–10 fold	Don't know
2. SPF is principally a measure of...	UV-A	UV-B	Sunlight/visible light	Don't know
3. Star rating is principally a measure of...	UV-A	UV-B	Sunlight/visible light	Don't know
4. A patient using SPF factor 5 means...	The UV dose required to produce minimum redness of the skin has increased by 5 times	The UV dose required to produce burning of their skin has increased by 5 times	The patient can stay in the sun 5 times longer	Don't know
5. What is the average duration of the action of sunscreens?	1–2 h	3–4 h	All day	Don't know
Do the following affect the action of sunscreens?				
6. Thickness of application	Yes	No	Don't know	
7. Evenness of spread	Yes	No	Don't know	
8. Latitude of use	Yes	No	Don't know	
9. Geographical altitude	Yes	No	Don't know	
10. In the shade, how much UV radiation can get through?	<30%	30–70%	70–90%	Don't know
11. Apart from the fabric, what is the most important factor affecting transmission of UV rays through the clothing?	Weave	Colour	Stretch of the fabric	Don't know
12. A cotton t-shirt when wet would drop its UV protection factor by	Nil	50%	100%	Don't know

The correct answers are: 1. 1–2 fold; 2. UV-B; 3. UV-A; 4. The UV dose required to produce minimum redness of the skin has increased by 5 times; 5. 3–4 h; 6. Yes; 7. Yes; 8. Yes; 9. Yes; 10. 30–70%; 11. Weave; 12. 50%.

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