

# A SUMMARY OF NEW NICE GUIDANCE ON SUNLIGHT EXPOSURE: ENCOURAGING BEHAVIOURAL CHANGE IN PHOTOPROTECTION

Andrew Thompson, Julie Van Onselen

Healthcare professionals can play an important role in preventing skin cancer via raising awareness of the effects of sun exposure and supporting people to revise behaviours that place them at increased risk. The recent revision to NICE guidance on Sunlight Exposure<sup>1</sup> provides up-to-date, evidence-based information that practitioners should seek to pass onto the public with regards to sensible sunlight exposure. The first half of the article gives a brief summary of the at-risk groups, the environmental factors that require consideration, and the myths and misconceptions that persist in relation to sunlight exposure which need to be challenged. The evidence suggests that simply providing information on risk is usually not sufficient to change behaviour in those who actively seek to tan; consequently the second half of this article describes some simple behaviour change techniques for use in dermatology practice.

Citation: Thompson A, Van Onselen J. A summary of new NICE guidance on sunlight exposure: encouraging behavioural change in photoprotection. *Dermatological Nursing* 2016, 15(2suppl):s10-s13

## KEY WORDS

- ▶ Behavioural change
- ▶ Cancer
- ▶ NICE guidance
- ▶ Sunlight exposure

## Introduction

Challenging myths on sun exposure and motivating people to change unhealthy sun behaviour is an important role and responsibility for dermatology healthcare professionals and for anyone who works in a care or educational setting or who is an employer with staff responsibility. The new NICE guidance on Sunlight Exposure gives

Andrew Thompson is a Clinical Health Psychologist and Reader in Clinical Psychology at the University of Sheffield. Julie Van Onselen is an Independent Dermatology Nurse, Dermatology Education Partnership Ltd, Oxford

evidence-based public health information to help prevent skin cancer; but also to ensure how sensible sunlight exposure is important for vitamin D production<sup>1</sup>. The first half of the article gives a brief summary of at-risk groups, environmental aspects and myths and misconceptions of sunlight exposure, as stated in the new NICE guidance<sup>1</sup>. The second half of the article explores how healthcare professionals can challenge myths towards sunlight exposure and introduces some simple behaviour-change techniques for dermatology healthcare professionals.

## New NICE guidance on sun exposure

In 2016, NICE published new guidance on sunlight exposure risks and benefits, aimed at healthcare professionals, NHS commissioners and managers, local authorities (and the wider public, private, voluntary and community sectors), as well as specifically people working in early-years educational settings, residential care, employers and the general public<sup>1</sup>.

This guideline replaces recommendations 1-5 in skin cancer prevention 2011 NICE guideline PH32<sup>2</sup> and should be read together with NICE's guideline on vitamin D: increasing supplement use among at-risk groups and any recommendations made by the Scientific Advisory Committee on Nutrition (SACN) on vitamin D<sup>3</sup>.

## 'At risk' groups

The NICE guidance<sup>1</sup> identifies several groups of people who are at risk of sun exposure; which may be over- or underexposure. NICE<sup>1</sup> recommends that public health activities should focus on these groups, which are listed in *Table 1*.

## Environmental considerations

There are several factors that need to be considered when advising patients and the public on exposure to the sun. In order to help with behavioural change, facts such as the effect of environmental factors on sun exposure and an understanding of the variation in intensity of sunlight is important to include in patient/public education:

Table 1.

Group of people at risk of over- or underexposure to sunlight<sup>1</sup>.

At risk of overexposure to sunlight	People at risk of skin cancer
Groups of people who should take extra care to avoid skin damage and skin cancer	<ul style="list-style-type: none"> <li>▶ Children (particularly babies) and young people</li> <li>▶ People who tend to burn rather than tan — people with lighter skin, fair or red hair; blue or green eyes, or who have lots of freckles</li> <li>▶ People with many moles</li> <li>▶ People who are immunosuppressed</li> <li>▶ People with a personal or family history of skin cancer (even if their natural skin colour is darker than that of the family member who had cancer)</li> </ul>
Groups who spend a lot of time in the sun and so are at increased risk of skin cancer	<ul style="list-style-type: none"> <li>▶ Outdoor workers</li> <li>▶ People with outdoor hobbies, for example golf, sailing</li> </ul>
Groups with high, but intermittent, exposure to sunlight and who are therefore at increased risk of skin cancer	<ul style="list-style-type: none"> <li>▶ People who sunbathe and take holidays in sunny countries</li> </ul>
At risk of underexposure to sunlight	People at risk of low vitamin D
Groups who have little or no exposure to the sun	Cultural reasons — skin is not exposed People who are housebound or otherwise confined indoors for long periods. For example, people who are frail or in institutions, or people who work indoors all day

Table 2.

The strength of sunlight at different times of day<sup>1</sup>.

Time of day	Strength of sunlight
Between 11am and 3pm	Sunburn is most likely Most people can make sufficient vitamin D by going out for short periods and leaving only areas of skin that are often exposed uncovered (such as forearms, hands or lower legs). Longer periods may be needed for those with darker skin
▶ Before 11am and after 3pm	It takes longer to synthesise sufficient vitamin D. The risk of sunburn is less
In the UK, sunlight is strongest between 11am and 3pm between March and October	

- ▶ Geographical location: solar UV levels increase nearer to the equator and at higher altitudes
- ▶ Time of year: from March to October UVB rays help people produce vitamin D, but excessive exposure can also cause sunburn. Solar UV levels are highest during the summer (and most intense in late June)
- ▶ Time of day: solar UV levels are highest around the middle of the day when the sun is highest in the sky
- ▶ Weather conditions: solar UV levels are reduced by cloud cover but they can still be intense enough to cause

- sunburn (even if it is not warm)
- ▶ Reflection: sunlight reflects off surfaces such as snow, sand, concrete and water. This can increase the risk of sunburn and eye damage, even in shaded areas
- ▶ UVA penetrates glass (although more weakly than direct exposure) and over long periods of exposure will cause skin damage. However, the vitamin D-inducing UVB does not penetrate glass.

#### Myths and misconceptions about sun exposure that may influence behaviour

There are several misconceptions

about sun exposure that may influence people's behaviour in how they expose themselves to the sun or are unaware of the dangers of over- or underexposure. A key fact is that increased frequency and time spent in the sun increases the potential risks of sunlight exposure. However, skin type also affects the potential risks and benefits from sunlight exposure. Table 3 outlines some common myths and misconceptions regarding sun exposure that people may express.

#### What is behavioural change and how might it be achieved in photoprotection?

##### The importance of behaviour

While the 'at risk' groups described above can be partly understood with reference to biological, environmental, and social factors, clearly an individual's ongoing behaviour in the sun plays a definitive role in their chances of developing skin cancer. Huge individual differences exist in the actions taken to seek out exposure to the sun and there is equal variation in the actions taken to protect from the effects of that exposure. Therefore the importance of changing behaviour in the fight to prevent skin cancer is undeniable.

Changing sun exposure behaviour is identified by NICE<sup>1</sup> as a public health responsibility for primary care practitioners along with those working in specialist dermatology services. Dermatology professionals can play a particularly important role in behaviour change in relation to sun exposure as they will encounter and have expertise in identifying people who will be at an increased risk because of their skin condition, treatment, or skin type. However, psychological research has consistently shown that simply raising awareness of the potential harm that can arise from carrying out certain activities (smoking, unprotected sex, heavy drinking, tanning etc) is often insufficient to change behaviour on its own<sup>4</sup>. Unhealthy behaviours tend to be resistant (although not entirely) to the provision of new information and are often habitual, automated, and reinforced by a range of individual and cultural variables.

Healthcare professionals should seek to share knowledge about the risks of sun exposure, however they also need to be

Table 3.

Common myths and misconceptions regarding sun exposure<sup>1</sup>.

	Myth/misconception	Reality
Sunlight misconception	I would not get sunburnt on a cool or cloudy summer day	Even if it is cool or cloudy, it is possible to burn in the middle of the day in summer. It is also possible to burn at other times of the day and year
Sunlight myth	A tan from sunlight is healthy as it protects against sun damage	There is no safe or healthy way to get a tan from sunlight. Getting a tan provides little protection against later exposure to sunlight and the resulting skin damage outweighs any later protective effect
Vitamin D myth	I should be able to absorb enough vitamin D sitting by a window with the sun streaming in	It is not possible to get enough vitamin D by sitting next to a closed sunny window
Vitamin D misconception	Vitamin D can be absorbed from winter sunlight	It is not possible to get enough vitamin D from sunlight between October and March in the UK

aware that motivations towards gaining a tan may persist despite the provision of information. It has been widely suggested that the culturally reinforced perception of attractiveness associated with tanning may continue to motivate people, particularly younger people, to engage in unhealthy sun exposure because the risk of becoming ill can be dismissed as distant (and hence incorrectly viewed as unlikely to occur).

Developing behaviour change interventions is a challenging and complex process drawing on theories that explain the underlying barriers to change, while at the same time drawing on research that identifies the mechanisms required for that change to occur. Before behaviour change interventions can be fully rolled out into practice they require that the component techniques have been subject to effectiveness and economic testing<sup>5</sup>. The Centre for Behaviour Change at University College London (UCL: [www.ucl.ac.uk/behaviour-change](http://www.ucl.ac.uk/behaviour-change)) emphasises the importance of behaviour change interventions being underpinned by understanding the motivations, opportunities and capabilities that influence the target behaviour. Motivations, for example, might consist of both conscious intentions and goals, such as deciding to reduce exposure to the sun, as well as automatic motivations including habits associated with sun

exposure, for example lying contentedly in the sun.

The NICE guidance<sup>1</sup> raises the importance of behaviour change, however it provides little in the way of advice as to how this might be actually undertaken in dermatology practice. Consequently, our aim here is not to provide a definitive guide to developing or even using behaviour change techniques, but rather to describe some simple approaches to supporting behaviour change that show promise in reducing risky sun exposure and that might also lend themselves for use in brief primary care or dermatology consultations.

#### Subtly challenging myths towards being in the sun

The evidence on the effectiveness of strategies to communicate complicated messages such as those concerned with sun protection is limited. Consequently it is not clear how healthcare practitioners such as dermatology nurses might best convey messages concerning the risks of over- or underexposure to the patients that they encounter. Nevertheless, NICE<sup>1</sup> makes clear recommendations for the need to raise public awareness of the environmental risk factors and myths associated with sun exposure that are described above and there is evidence that many people still lack knowledge about sun exposure. There is also evidence that advice provided face-to-

face by healthcare practitioners might be more effective than information provided by mass media, particularly if it's framed in relation to the specific patient's risk issues and motivations<sup>6</sup>. Consequently we have provided (Table 4) a list of useful web resources that can be used to provide patients with straightforward and sensible advice.

While attitudes are just one of the many determinants of behaviour change, researchers in this area have advocated the importance of understanding the individual patient's motivations towards tanning and particularly the benefits they perceive that they achieve from engaging in this behaviour. For example, is seeking a tan associated with enhancing appearance? Or/and viewed as a way of 'treating oneself', or of reducing stress? While there are common motivations, there will be a range of individual differences and different groupings of people who see a tan that may require different behaviour change approaches.

As a result of this, Robinson et al in 2016<sup>7</sup> suggested that healthcare practitioners should take a patient-focused approach during history taking, asking open questions such as: *how does having a tan make you feel?* And, *what do you get out of having a tan?* They suggest that this approach, if done in a noncritical, exploratory fashion, can enable the healthcare practitioner to establish the specific motivations for individual patients in engaging in risky tanning. This in turn enables the tailoring of advice to the specific patient. Patients whose motivation is to relax or see sun exposure as stress reduction can be advised of the stress associated with illness and guided towards using other approaches to stress reduction. This might simply involve discussions of alternative ways of pampering or looking after themselves, such as increasing other activities that they personally enjoy and that are associated with lower risks.

#### Some examples of simple behaviour change techniques

Using a range of behaviour change techniques in combination has been shown to be useful. For example, Mahler et al<sup>8</sup> reported that the combination of

providing cosmetic sunless tanning product alongside a personal UV facial photograph showing sun damage resulted in reduced sun exposure in comparison to a participant group that were provided with a UV photograph alone, without advice on low-risk means of altering skin tone. This approach shows how the motivation of enhancing appearance is tackled by both finding a low-risk alternative to appearance enhancement which allows for conforming with social pressures, while at the same time seeking to raise awareness of the specific impact UV exposure has on ageing and damaging the skin. This combined approach may be particularly important with young adults where cultural and peer pressures may maintain appearance-driven unhealthy sun exposure and where the perception of being invincible might be more commonplace. Healthcare practitioners can provide advice about the effects of the sun on the appearance of the skin and should consider combining this with more sophisticated information containing images of the effects of photoageing. Where resources allow and risks are high, use of UV photography to show the patient the personal impact may well be useful.

There is now significant evidence in other areas of unhealthy behaviours that people can be helped to bridge the gap between intention to change and taking

action by being guided to form advance 'if-then' plans<sup>4</sup>. Such plans are seemingly straightforward statements whereby an opportunity or obstacle to taking action is specified (*if*) and followed by also naming a resulting desired response (*then*). For example, van Osch et al<sup>9</sup> reported finding some improvement in parental application of sunscreen to children using the following simple if-then plan: 'If . . . . ., then I will apply sunscreen SPF 20+ on my child every 2 hours.' The use of if-then plans in improving sun protection behaviours needs further research but could be an intervention that might easily be built into sun protection guidance leaflets.

### Conclusion

The review of effectiveness commissioned by NICE<sup>1</sup> identified several interventions that have changed sun-exposure behaviour. NICE<sup>1</sup> concludes that the existing research into behaviour change interventions is limited by small sample sizes, and lacks longer-term follow-up periods, and generally has been shown to have relatively small effect size. The lack of longitudinal studies is particularly worrying as, given the time it may take to develop skin cancer and the ongoing occurrence of environmental risk, behaviour-change interventions will need to be repeated and reinforced, and we currently lack information as to the frequency at which this needs to occur.

That said, we have described how a number of techniques evidenced in changing other unhealthy behaviours, as well as those that have been specifically tested in reducing the risks associated with exposure to the sun, might be adopted into routine healthcare practice in accordance with the recommendations of the NICE guidance<sup>1</sup>.

### References

1. National Institute for Health and Care Excellence. Sunlight exposure: risks and benefits. NICE guidance NG34. 2016. Available at: [www.nice.org.uk/guidance/lifestyle-and-wellbeing/sunlight-exposure](http://www.nice.org.uk/guidance/lifestyle-and-wellbeing/sunlight-exposure) [accessed 18 May 2016]
2. National Institute for Health and Care Excellence. Skin Cancer Prevention. NICE guideline PH32. 2011. Available at: [www.nice.org.uk/guidance/ph32](http://www.nice.org.uk/guidance/ph32) [accessed 18 May 2016]
3. Public Health England. Scientific Advisory Committee on Nutrition (SACN) update on vitamin D. 2007. Available at: [www.gov.uk/government/publications/sacn-update-on-vitamin-d-2007](http://www.gov.uk/government/publications/sacn-update-on-vitamin-d-2007) [accessed 18 May 2016]
4. Rothman AJ, Gollwitzer PM, Grant AM, Neal DT, Sheeran P, Wood W. Hale and hearty policies: How psychological science can create and maintain healthy habits. *Perspect Psychol Sci* 2015, 10(6): 701-05
5. Craig P, Dieppe P, Macintyre S, Michie S, Nazareth I, Petticrew M. Developing and evaluating complex interventions: the new Medical Research Council guidance. *BMJ* 2008, 337: a1655
6. Cikalo M, Fitzgerald A, Brown S, Edwards M, Glanville J. National Institute for Health and Care Excellence: Overview of systematic reviews exploring complex risk communication. 2014. York Health Economics Consortium. Available at: [www.nice.org.uk/guidance/ng34/evidence/evidence-review-1-overview-of-systematic-reviews-exploring-complex-risk-communication-2311295437](http://www.nice.org.uk/guidance/ng34/evidence/evidence-review-1-overview-of-systematic-reviews-exploring-complex-risk-communication-2311295437) [accessed 21/05/2016]
7. Robinson JK, Baker MK, Hillhouse JJ. New approaches to melanoma prevention. *Dermatol Clin* 2012, 30(3): 405-12
8. Mahler HIM, Kulik JA, Harrell J, et al. Effects of UV photographs, photoaging information, and use of sunless tanning lotion on sun protection behaviors. *Arch Dermatol* 2005, 141(3): 373-80
9. Van Osch L, Reubsat A, Lechner L, de Vries H. The formation of specific action plans can enhance sun protection behaviour in motivated parents. *Prev Med* 2008, 47(1): 127-32

Table 4.

#### Web-based information sources for HCPs and the public.

Web pages	Website
Sun Safety Q&A	NHS Choices <a href="http://www.nhs.uk/Livewell/travelhealth/Pages/SunsafetyQA.aspx">www.nhs.uk/Livewell/travelhealth/Pages/SunsafetyQA.aspx</a>
Sun Smart – Healthcare professional area	Cancer Research UK <a href="http://www.cancerresearchuk.org/health-professional/prevention-and-awareness/sunsmart">www.cancerresearchuk.org/health-professional/prevention-and-awareness/sunsmart</a>
Sun, UV and cancer – Public area	Cancer Research UK <a href="http://www.cancerresearchuk.org/about-cancer/causes-of-cancer/sun-uv-and-cancer">www.cancerresearchuk.org/about-cancer/causes-of-cancer/sun-uv-and-cancer</a>
Skin at work: outdoor workers and sun exposure	Health and Safety Executive <a href="http://www.hse.gov.uk/skin/sunprotect.htm">www.hse.gov.uk/skin/sunprotect.htm</a>
Staying safe in the sun: top tips to help	Met Office <a href="http://www.metoffice.gov.uk/get-ready-for-summer/relax/sun-safety">www.metoffice.gov.uk/get-ready-for-summer/relax/sun-safety</a>
Your skin in the sun	La Roche-Posay <a href="http://www.laroche-posay.co.uk">www.laroche-posay.co.uk</a>