



Staying Safe in the Sun

Practitioners discuss the best advice to offer patients for protecting skin from UV damage and which sunscreens they believe to be most effective

As the summer months draw closer patients and practitioners alike will look to make the most of the seasonal heat, but at the same time protect themselves from harmful ultraviolet (UV) radiation. As aesthetic practitioners, how can patients be best advised to stay safe whilst in the sun, and how can this information be incorporated into every patient consultation?

Ultraviolet radiation

Although basking in the sun is on many people's minds at this time of year, the UV rays emitted should always remain an important concern. UV radiation is part of the electromagnetic spectrum that reaches the earth from the sun. The wavelengths are shorter than visible light, which is why they cannot be seen with the naked eye.² They are classified into three main types – UVA, UVB and UVC; UVA has the longest wavelength of the three, followed by UVB and UVC. The UVC rays, which would be the most damaging to humans,¹ are so short, that they are absorbed by the ozone layer and do not reach earth.²



Figure 1: 69-year-old truck driver presenting with unilateral photoageing

As UVA and UVB do penetrate the atmosphere, these are the ones to be wary of. Aesthetic nurse prescriber and founder of Face Cosmetic Training, Jacqueline Naeini, says, "Patients will come to me and say, 'I want to get a sun tan', but I tell them about the UV rays; I explain that one way to remember it is UVA for 'UV Ageing' and UVB for 'UV Burning'. I inform patients that 95% of damage to their skin is from UVA whereas 5% of damage is from UVB^{2,7} – and so many don't know that."

Dr Sarah Norman, aesthetic practitioner, and owner of BrightNewMe clinic reiterates Naeini's point, explaining, "I remind patients that UVA is not blocked by glass or clouds, it's consistently present throughout the year, during daylight hours and throughout all the seasons, irrespective of cloud cover."

UVA rays penetrate deeper into the skin than UVB and play a major part in skin ageing. UVA has also been shown to damage keratinocytes in the

basal layer of the epidermis where most skin cancers occur, meaning UVA can also cause skin cancers. UVB is responsible for the darkening and thickening of the outer cell layers,¹ and with too much exposure can lead to burning of the skin and skin cancer.

"I always use the example of the lorry driver (Figure 1)," says Naeini, referring to the infamous image of a 69-year-old man who spent 28 years as a lorry driver and never used sun protection. This left the man with an exceptionally obvious difference between the two halves of his face, with the side of his face nearest the window heavily wrinkled and pigmented from UVA rays. "It shows the damage UVA has done to his skin and how much it has aged him. This shows patients why we should put sun protection on all year round. I always say to patients that whatever you put on your skin, sun protection is number one."

Preparation

Many practitioners incorporate the topic of sun protection into every patient's initial consultation. Dermatologist and cosmetic practitioner Dr Ariel Haus says, "I always give patients information from the British Association of Dermatology (BAD) and explain how to use sunblock, information on skin cancer and how to check their skin. Part of the homecare of any procedure is always sunblock." He continues, "I also work for the NHS as well as privately and see a lot of patients with skin cancer, so I see the damage sun can do. I remind patients the only time there is no sun is in the evening – I'm so surprised how many people don't realise that."

Before contemplating sun protection, dermatologist Dr Tiina Orasmae-Meder informs her patients how to prepare the skin in advance of the summer months. "I recommend that all my patients stop chemical peel treatments and products containing acetic acid and retinoid around April-time. After that, they need to continue to exfoliate and do hydrating treatments." She explains that it is especially important for patients to be wary of ingredients they use in the summertime, as some, such as acetic acid and retinoids can increase skin sensitivity.^{8,9} "Vitamin C is a good alternative to acetic acid for the summer period but it's better to apply it at night because it also can effect sensitivity when initially applied and could lead to issues with pigmentation," she says. During the summer months Dr Orasmae-Meder advises

A survey of 215 individuals conducted online by the BAD indicated that eight out of ten people are failing to adequately apply sunscreen before going out in the sun

patients to focus on hydrating products. “If possible patients should apply a hydrating face mask three to four times per week. These masks usually contain lots of anti-inflammatory ingredients such as red grape extract which is really beneficial when the sun has caused the skin to become dry.”

Practitioners also advocate analysing the current state of the skin in order to see which treatments would be most beneficial. Dr Haus uses a skin analysis device. He explains, “It shows how much sun damage and UV exposure the patient has had and it’s also useful for mole mapping and checking for changes in the moles. Once we have analysed the skin we create a treatment plan.”

Protection

There is a vast array of products that claim to protect the skin from sun damage, making it difficult for patients to know which will work best. However practitioners interviewed for this article unanimously agree that there is a substantial difference in quality between sunscreens available on the high street and those available in clinics. Dr Martyn King, director of the Cosmedic Skin Clinic says, “I think the high street products can sometimes be misleading when they only show the sun protection factor (SPF), which only measures how effective the product is at preventing UVB rays when we need full spectrum protection. It could lead some people to think they’re completely covered because the product has a high SPF but in fact the UVA will still be causing damage.”

Dr King continues, “I don’t like some of the chemicals put in

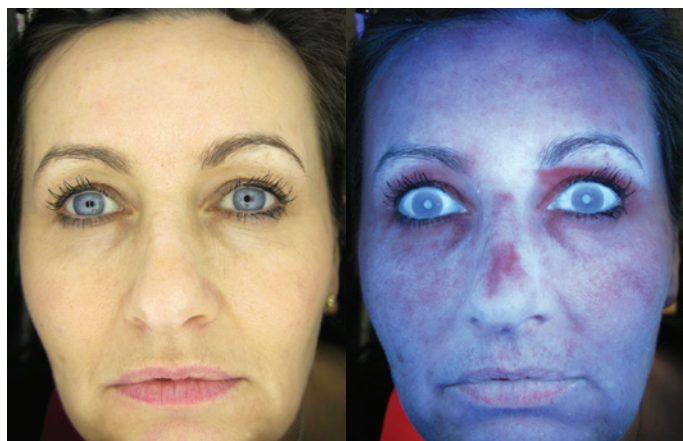


Figure 2: 49-year-old female patient showing sun damage – before and during a skin analysis. The image was taken using the Opatra Skin Analysis system. Image courtesy of Dr Martyn King.

NICE Guidelines

A summary of some of the NICE guidelines surrounding sun protection:⁴

- When possible, only a limited amount of time should be spent in strong sunlight. It is preferable to spend more time in the shade.
- Protection from the sun can be achieved by covering up with suitable clothing, seeking shade and applying sunscreen.
- Suitable clothing includes: a broad-brimmed hat that shades the face, neck and ears, a long-sleeved top, and trousers or long skirts in close-weave fabrics that do not allow sunlight through. It also includes sunglasses with wraparound lenses or wide arms that have the CE Mark.
- Sunscreen is not an alternative to covering up with suitable clothing and seeking shade, but it does offer additional protection.
- Sunscreen should meet minimum standards for UVA protection – the label should have the letters ‘UVA’ in a circle logo. Preferably, the label should state that it provides good UVA protection (for example, at least ‘4-star UVA protection’ but some brands use the term ‘broad spectrum’ which encompasses both high UVA and UVB protection). It must provide at least SPF 15 to protect against UVB.
- The amount of sunscreen needed for the body of an average adult to achieve the stated SPF is around 35ml or six to eight teaspoons of lotion.
- Sunscreen needs to be reapplied liberally, frequently and according to the manufacturer’s instructions. This includes straight after being in water and after towel drying, sweating or when it may have rubbed off.
- If someone plans to be out in the sun long enough to risk burning, sunscreen needs to be applied twice to exposed areas of skin: half an hour before, and again around the time they go out in the sun. This includes the face, neck and ears (and head if someone has thinning or no hair), but a wide-brimmed hat is better.

sunscreens so in my clinic we stock Universkin which is mineral based – containing zinc oxide and titanium dioxide – and that protects you for both radiation types.”

Universkin is a skincare range that the manufacturers say can be personalised to suit every patient’s needs. Each combination starts with the base serum, which contains 11 ingredients including hyaluronic acid, vitamin E and Omega 3, and then other ingredients can be added in from a range of 19 actives.

Dr King explains, “I find that some products can feel a bit ‘powdery’ but Universkin goes on very nicely and doesn’t feel dry or powdery. It has no preservatives and its paraben free, so it really is quite a calming product.”

Dr Norman tends to recommend Obagi SPF 50 to her patients, as she finds that this can be applied easily onto the skin and is non-comedogenic. “I like the Obagi SPF 50 as it’s not greasy, it’s fragrance free and unlike many high factor products it doesn’t appear white on the skin which is important. I also offer patients Zein Obagi Skin Health (ZOSH) broad spectrum SPF’s which have a tint.” She continues, “A lot of my patients say they don’t really want to be wearing a factor 30 or 50 as they say it looks ‘too white’, but

“Patients will come to me and say, ‘I want to get a sun tan’, but I tell them about the UV rays; I explain that one way to remember it is UVA for ‘UV Ageing’ and UVB for ‘UV Burning’”

Jacqueline Naeini, aesthetic nurse prescriber

the Obagi SPF appears sheer. It also has a PA+++ rating, which is the highest protection from UVA.”

Many patients will be familiar with certain brands using a star rating to indicate the level of UVA protection (1-5), but there is another system, the Protection Grade of UVA (PA), that most medical-grade products use. The star system, which is said to have been originally devised by Professor Brian Diffey of Newcastle University,⁴ is a measure of how much UVA is absorbed when testing products in the laboratory. The PA system, created in Asia, works by assessing the darkening of the skin following application of sunscreen, directly measuring the effect of radiation on the skin.³

Another product with a high PA rating is the NeoStrata Sheer Physical Protection SPF 50, which Naeini recommends to her patients. “I use the NeoStrata Sheer Physical Protection because it’s a mineral sunscreen and suitable for all skin types. The texture is really fine and transparent so patients feel comfortable when putting their makeup on over the top of it.” She continues, “I very much go on what the patient wants, I let them have a look and a feel and then it’s their preference; if they’re having a Skin Tech Easy Phytic skin peel I’ll recommend a Skin Tech Melablock HSP SPF 30 or 50, if they’re using the Exuviance skincare range then I would recommend the Exuviance SPF – they’re all good and they’ve all got a broad spectrum. The reason why I use them is because they also fit in with the NICE guidelines.”

Application

A survey of 215 individuals conducted online by the BAD indicated that eight out of ten people are failing to adequately apply sunscreen before going out in the sun.⁵ The survey also suggested that 70% of people fail to reapply sunscreen every two hours as recommended.

“I don’t believe people apply as they should,” says Naeini. “I think people believe if they put it on in a morning then that’s enough for the rest of the day, but it needs to be reapplied every two hours according to NICE guidelines.” Dr Norman agrees, “I always say to my patients use a ‘big gloop’ and use it ‘liberally and fastidiously’.

Dr King says, “If you’re on holiday and in and out of the water all the time or in a very hot climate then you need to apply frequently. I think the best advice for most people for all-year-round is to apply it in the morning as part of their regime and get into the habit of that.”

What to be aware of

What many patients may not realise is that certain compounds can make the skin even more sensitive by reflecting UV rays on to the skin; meaning sun cream should be reapplied even more frequently. Naeini says, “15% of harmful rays are reflected from the sand and 5-10% of harmful rays are reflected from the water, so that’s even more of a reason to reapply regularly. When patients are on skiing holidays they need to be aware that 75% of harmful rays are reflected back from the snow, so they need to make sure they’re definitely putting sun protection on and covering up.”¹⁰

Dr Norman says that patients should also be wary of using makeup as a form of sun protection. “Research shows that you would actually need to apply seven times the amount of normal foundation and 14 times the normal amount of powder in order to get the full SPF that’s written on the products¹¹ – and most patients don’t want to be caked with makeup and powder.”

Another major concern is how vitamin D can be absorbed if people are wearing sunblock. According to NICE, one in five adults may be vitamin D deficient.⁶ Dr Haus says, “It’s important to make sure that patients are still getting vitamin D. I always advise patients to get some exposure before 10am and after 4pm; between those times they must use sun protection. If patients are already quite low then I would advise they use supplements.”

Conclusion

Overall, the level of education patients have when it comes to sun protection is varied and not uncommonly minimal, but Dr King thinks that people are starting to become more aware, “Vitamin D levels are checked in general practice a lot more often now, it’s a much easier test to do, and it’s actually very rare to find anybody with a normal vitamin D level; nearly the whole nation is deficient. This tells me people are paying a lot more attention now to staying out of the sunlight, so I think that health messages from years ago might have actually stuck.” He continues, “But the problem is, a lot of people will go for a brand they know or what’s a good price or what’s on offer, instead of actually looking at the ingredients and the real evidence behind it.” Dr Norman concludes, “I quite often remind patients of the Australian ‘Slip! Slop! Slap!’ awareness campaign – slip on a top, slop on cream and slap on a hat. Sometimes people also add on ‘Seek! Slide!’ – seek the shade and slide on glasses and that’s just my way to always remind people they can’t just rely on the sun cream.”

REFERENCES

1. Who, Ultraviolet radiation and the INTERSUN Programme, *World Health Organisation*, (2016) <<http://www.who.int/uv/faq/whatisuv/en/index2.html>>
2. Dr John H. Epstein & Stephen Q. Wang, UVA & UVB, *Skin Cancer Foundation*, (2013) <<http://www.skincancer.org/prevention/uva-and-uvb>>
3. Cosmetic scientist’s blog, UVA Protection – What Do the Ratings Mean? *Colin Beauty Pages*, (2013) <<http://colinsbeautypages.co.uk/uva-protection-what-do-the-ratings-mean/>>
4. NICE, Sunlight exposure: risks and benefits, *NICE guidelines*, (2016) <<https://www.nice.org.uk/guidance/ng34/chapter/2-Supporting-information-for-practitioners>>
5. BAD, Brit’s slapdash approach to sunscreen putting lives at risk, *British Association of Dermatologists*, (2016) <<http://www.bad.org.uk/News.aspx?siteid=154&itemid=8469>>
6. NICE, Millions of people at risk of low vitamin D need better access to supplements to protect health, says NICE, *NICE press release*, (2014) <<https://www.nice.org.uk/news/press-and-media/millions-of-people-at-risk-of-low-vitamin-d-need-better-access-to-supplements-to-protect-health-says-nice>>
7. Jennifer Zhao, The Difference Between UVA and UVB Rays, *Global Research*, (2011) <http://www.geglobalresearch.com/blog/the-difference-between-uva-and-uvb-rays>
8. Amy Wiggin, How Retinol Can Change Your Skin, *Birchbox*, (2014) <https://www.birchbox.com/magazine/article/how-retinol-can-change-your-skin>
9. Bul. S. Acetic acid general information, Health Protection Agency, (2010) <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/315396/acetic_acid_general_information.pdf>
10. Cancer Research UK, Am I at risk of sunburn? *Cancer Research UK*, (2015) <<http://www.cancerresearchuk.org/about-cancer/causes-of-cancer/sun-uv-and-cancer/am-i-at-risk-of-sunburn>>
11. Susan, P. Clark, Sunscreen and Your Makeup Routine, *WebMD*, (2012) <<http://www.webmd.com/beauty/sun/sunscreen-and-your-makeup-routine?page=2>>