

Perspective

Sunscreens: The feebly addressed nuances

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ABSTRACT

Sunscreens have become a foundation of every skin care regimen. While aggressive marketing and social media have brought a barrage of sunscreen brands to choose from at every home, the nuances of proper use have been lost in this circus. Consumers have become aware of sun protection and the use of sunscreens, but are still not effectively putting their products to use. Due to this, dermatologists encounter many queries, myths, and sometimes even distrust for sunscreens. We, as dermatologists, apart from being the primary caregivers to the largest organ of the body, also need to be educators for our patients. A dermatologist should be able to answer every query and bust every myth regarding the cornerstone of every skin care regimen, that is, sunscreens.

Keywords: Sunscreens, Sunscreen use guidelines, Sunscreen myths

INTRODUCTION

Sunscreens have formed a foundation of every skin care regimen across the board. As awareness of the harmful effects of ultraviolet (UV) light has increased, people have realized the importance of using sunscreen. An increase in awareness has understandably given rise to many queries and myths about sunscreen use.

There are numerous pharmaceutical and cosmetic companies in the market that manufacture and market skin care products, with sunscreen being their foremost launch. While we can give credit to the social media influencing and marketing bandwagon for the importance of sunscreen use, the problem arises when the nuances are not discussed in detail. Product marketing is not enough to ensure proper use, thereby reducing the effectiveness and, in some cases, creating a general distrust of the use of sunscreens.

HOW MUCH TO USE AND HOW OFTEN TO APPLY

The United States Food and Drug Administration (U.S. FDA) recommends 2 mg/cm² of sunscreen for obtaining desired sun protection, that is, almost 30 g to cover the full face (including ears) and neck. As lips are as exposed to UV light as the rest of the face, the use of lip sunscreens should be put into practice.^[1]

The 'Teaspoon rule' for sunscreen application: 3 mL (slightly more than half a teaspoon) for face & neck, and each arm. 6 mL (slightly more than a teaspoon) for each leg, chest, and back.^[2]

As per guidelines suggested by the American Academy of Dermatology Association, a sunscreen should be applied at least 15 min before going outdoors so that it absorbs into the skin and provides protection. Reapplication is required after sweating and swimming as well, even if a water-resistant or a very water-resistant sunscreen is used.^[1,3]

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WHAT SUN PROTECTION FACTOR (SPF) TO USE

The U.S. FDA has recommended using a broad-spectrum sunscreen with an SPF of 30 or higher.^[1] The light-skinned population is more prone to the damage caused by UVB, and the dark skinned population is more prone to hyperpigmentation and tanning caused by UVA. In general, for the light skin population, an SPF of 50+ is recommended, and for the dark skin population, an SPF of 30+ is recommended.

WHAT IS MORE IMPORTANT FOR INDIAN SKIN, SPF, OR PROTECTION GRADE OF UVA (PA)

SPF is a predictor of protection against UVB, which causes erythema, inflammation, and sunburns. PA is a predictor of protection against UVA, which causes tanning, hyperpigmentation, and early signs of aging.^[4] Indian skin type (Fitzpatrick phototypes IV and V) is more prone to tanning, hyperpigmentation, and early signs of aging rather than sunburns. Hence, the effect of UVB, though not negligible, is less as compared to that of UVA. Therefore, when choosing a sunscreen for Indian skin, it is advisable to keep in mind the PA grading along with the SPF.

WHEN TO START USING A SUNSCREEN

As per guidelines provided by the American Academy of Dermatology (2025), all age groups, including kids, need to use sunscreen with an SPF of 30 or above.^[3] The 1999 FDA Sunscreen Final Monograph advised that parents of infants younger than 6 months should use protective, tight-weave, darker clothing instead of a sunscreen. This recommendation is based on infants' underdeveloped metabolism and their inability to excrete chemicals absorbed from sunscreen.^[1]

REAPPLICATION

Sunscreen should be reapplied every 2 h, as well as after sweating, bathing, and swimming.^[1] A very frequent question that dermatologists come across regarding reapplication of sunscreens is “if one needs to wash their face before reapplying a sunscreen?” The answer is, “it is not necessary,” simply for the lack of convenience. However, individuals who sweat a lot or remain in dusty conditions are advised to wash their faces to avoid clogging of pores [Table 1].

HOW TO STORE SUNSCREEN


The FDA recommends not exposing sunscreen containers to direct sunlight. Protect the sunscreen by wrapping it in towels or keeping it in the shade while outside in the heat for long periods of time.^[1]

Table 1: How to effectively use a sunscreen.

When doesn't a sunscreen work	Effective use of a sunscreen
<ul style="list-style-type: none"> • Under application • Failure to reapply • Mismatch between the labeled SPF and delivery 	<ul style="list-style-type: none"> • Application of the recommended amount, that is, 2 mg/cm², as advised by the FDA • Sunscreen should be reapplied every 2 h, as well as after sweating, bathing, and swimming • Avoiding exposure to sunlight during the time of day when UV radiation is at its highest, that is, between 10 am and 3 pm • If sun exposure during this time is unavoidable, it is advisable to use sun protection (i.e., umbrella and sun protection clothing) along with the sunscreen • Educate preadolescents so they develop the habit of using sunscreens at a young age
<p>FDA: Food and Drug Administration, UV: Ultraviolet, SPF: Sun protection factor.</p>	

SUNSCREEN MYTHS

There is enough information and awareness regarding sunscreen use. With increased awareness, there are some myths floating around regarding sunscreens. While some of these myths have been scientifically addressed, many of them prevail only due to a lack of proper counseling. It is important for us, as physicians, to address the smallest of these queries and myths regarding sunscreens [Figure 1 and Table 2].



OUR ROLE

Physicians should be aware of the composition of the sunscreens and the protection factor of the formulations

Enforce and reinforce the patients about the proper application technique and insist on reapplication

Counsel pre-teens and adolescents regarding the regular and proper use of broad-spectrum sunscreens

Answer all, albeit small, queries of your patients. You are their best educators.




Figure 1: Our role as physicians and primary educators to our patients.

Table 2: Sunscreen myths.

Sunscreen myths	Busting myths
Reapplication of a sunscreen prevents sun damage	Sunscreens do delay sun damage, but reapplication doesn't bring the risk to zero. For true protection, even with a sunscreen, it is advised to limit the total time spent in the sun
Sunscreens are not required on cloudy days and in winter	Clouds do provide a little protection, but the UV index, even with a cloud cover, is high enough to cause sun damage
Waterproof sunscreens do not need to be reapplied after sweating or swimming	No sunscreen is truly "waterproof." Waterproof implies "water resistant." These sunscreens do last longer in water and sweat, but they can wash off and need to be reapplied
Darker skins do not need sunscreen	The melanin pigment protects the skin from sun damage, but this protection is limited, and sunscreen application is still pertinent
Individuals who do not spend much time outdoors, or drive to work, or have an office job, can skip sunscreen reapplication	Not only do you need protection from direct UV from the sun, but also from the reflected rays. You are exposed to UV from your car windows, and fluorescent and incandescent lights
Individuals using skin care products with SPF do not need a sunscreen	Combining sunscreen agents with other products can potentially reduce their protective potential against UV. Hence, a sunscreen should be applied on top of the skincare products
Sunscreens can cause infertility and hormonal imbalance	Systemic absorption of ingredients such as oxybenzone, octinoxate, and padimate O has shown no adverse effects on fertility, hormone levels, or child development. However, associations with thyroid hormone, testosterone, and kidney function warrant further investigation. ^[5]
Sunscreens cause cancer!!!	There is no medical evidence that sunscreen causes cancer. ^[6]
The SPF in my makeup is enough for sun protection	The SPF in makeup is typically up to 15 SPF, which is less than the recommended SPF of 30 layering the sunscreen with makeup enhances the sun protection factor. ^[7]

UV: Ultraviolet, SPF: Sun protection factor.

While educational interventions often address common myths about sunscreen use, certain misconceptions, particularly those suggesting hormonal imbalances or carcinogenic potential, have contributed to a growing phobia. However, studies have shown no adverse effects on fertility, hormonal function, or child development associated with sunscreen use, even in children. While further studies are needed to fully understand the impact of sunscreen ingredients on kidney function, testosterone, and thyroid hormone levels, the existing data does not support any contraindications to their use at this time.^[5] Current scientific evidence does not support any causal link between the use of sunscreen and the development of cancer.^[6] Regular and appropriate use of broad-spectrum sunscreens has been shown to reduce the risk of skin cancers, including squamous cell carcinoma and melanoma.^[8] The FDA approves ingredients like oxybenzone and octinoxate, with safety guidelines.

CONCLUSION

Due to awareness of sunscreen use, most people do have a sunscreen at home and are convinced that the product is good enough, even if it has a low SPF, has no PA grading, or has unapproved labels. Adding to this is the stereotype of dermatologists prescribing "expensive products," and it is a very common occurrence that a patient does not even bother to buy the sunscreen mentioned in their prescription, citing, "I already have a sunscreen at home, but I did not use it." Dermatologists become a bridge between a producer and the consumer so that the patients can put their money and trust to an effective use.

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