



Helpful Ideas for Enhancing Patient Sunscreen Compliance

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How do you convince a patient with a face full of actinic keratoses and basal cell carcinomas to use sunscreen? How do you encourage a teenage summer lifeguard to wear sunscreen at the neighborhood pool? How do you emphasize to a mother that she must apply sunscreen to her 2-year-old daughter? I have been practicing dermatology for almost 20 years, and I still struggle with answering these questions. Engendering compliance for any activity means having the patient buy into the concept and accept ownership. If the patient does not see any benefit to the activity, compliance cannot be engendered. It is difficult to get a patient with severely sun-damaged skin and a history of numerous skin cancers to wear a sunscreen because he/she believes that the damage has already been done; it is too little, too late to wear sunscreen now. It is equally difficult to get a teenage lifeguard to wear sunscreen when he/she perceives no problem and likes the idea of a deep summer tan. It is even harder to get an overburdened mother to chase her screaming young daughter all over the house with a bottle of sunscreen. But we, as dermatologists, are convinced that using sunscreen is the best way to prevent premature photoaging and skin cancer.

Compliance is key to sunscreen efficacy (Table). Sunscreens do not work if they remain in the bottle. Sunscreen manufacturers estimate that the average adult in the United States uses less than one bottle of sunscreen per year. Clearly, this is indicative of poor compliance because one bottle, if applied as directed on a daily basis, should last one month. Why is sunscreen compliance an issue? There are many reasons, but I will explore some of the major issues in this article.

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Sunscreens Are Sticky

One of the most common reasons why patients do not like sunscreens is because they can be sticky. Perhaps it may be helpful to obtain more insight into this issue. Most of the chemical sunscreen actives are sticky oils, such as methyl anthranilate. Usually, a sunscreen formulation will combine at least 2 to 3 different actives to achieve broader spectrum coverage and a higher sun protection factor (SPF). The SPF increases as the concentration of the active increases. Thus, higher SPF products usually are stickier (sunscreens with an SPF of 30 or higher usually are stickier than sunscreens with an SPF of 15 or lower). An SPF of 15 blocks about 93% of UVB radiation, while an SPF of 30 blocks about 97% of UV radiation. The difference in UVB photoprotection is only 4% and means the difference between an aesthetically pleasing sunscreen and one that is undesirable. For this reason, dermatologists should reconsider advising patients to use the highest SPF product possible. Lower SPF products generally have better aesthetics and may yield better compliance. My recommendation is that patients should use a sunscreen with an SPF of 15, which provides excellent photoprotection and optimal aesthetics.

Sunscreens Make You Hotter in the Sun

Another common complaint regarding sunscreen use is that patients feel hot and sweaty when they wear sunscreens. While some of this may be because sunscreens are worn in the hot sun, chemical sunscreens such as octylmethoxycinnamate, benzophenone, methyl anthranilate, and homosalate actually function by transforming UVB radiation to heat energy. This generation of heat by the sunscreen contributes to the feeling of skin warmth. This should not be a deterrent to wearing sunscreen, however, as physical sunscreen agents such as zinc oxide or titanium dioxide do not produce heat. Selecting the proper sunscreen can help minimize this problem, which may lead to increased compliance.

Sunscreens Cause Acne

Many patients believe that sunscreens cause acne. Usually, the acne is in the form of inflammatory papules,

Methods for Improving Sunscreen Compliance

- Develop habits for good hygiene during childhood (ie, brush teeth, wash face, apply sunscreen).
- Select sunscreen formulations that are appropriate for the application site.
- Use sunscreen-containing moisturizers on the face, neck, upper chest, and hands.
- Women should select a sunscreen-containing facial foundation.
- Use a sunscreen-containing lip balm or lipstick.
- Men should use a gel sunscreen as an aftershave.
- Apply a quarter-sized dab of sunscreen to the face, neck, and ears.
- Develop a routine for applying sunscreen to the face, front of the neck, back of the neck, ears, behind the ears, and central chest.
- Select separate products with different aesthetics for daily wear and beach wear.
- Use clothing effectively in the form of long pants, long sleeves, hats, scarves, and umbrellas as photoprotection.

not open or closed comedones, and presents within 48 hours after the sunscreen is initially applied. This is not true acne because sufficient time has not elapsed for follicular rupture to occur. The acne that results from sunscreen use is more of an acneiform eruption, which, in my opinion, is indicative of irritant contact dermatitis. Some of the more extended-wear, water-resistant sunscreens are more occlusive by nature and may cause difficulty at the follicular ostia. The solution to this problem is sorting through a variety of sunscreen formulations through trial and error. Major problems can be avoided by applying the sunscreen to a small area of skin in front of the ear for 5 consecutive nights. The skin should be observed for the presence of inflammatory papules and pustules. Another helpful tip is to

avoid long-wearing sunscreen products. For daily use, long-wearing products are not necessary and a sunscreen-containing moisturizer may be a good alternative. If a beachwear product is needed, the vehicle of gel sunscreens, which may contain a polymer, should be avoided. Instead, a lightweight cream formulation should be selected and then applied frequently to obtain maximal protection.

Sunscreens Sting When Applied

It is true that some sunscreens sting when applied. This is more common in gel sunscreen formulations with a high concentration of a volatile vehicle such as alcohol. Applying creamy sunscreens is a possible solution to this problem. Sunscreens also may sting when they enter the eye. One option is to use one of the waxy stick sunscreens in the eye area because it will not melt or run when combined with sweat. These sunscreens can be applied above the eyebrows and on the upper and lower eyelid. One of the methods for improving compliance is to pick the proper sunscreen for the proper skin site. No one sunscreen formulation will work on all body areas.

Sunscreens Do Not Work

Some people are skeptical of sunscreen efficacy. This concern may be well founded because sunscreens can fail. How does this occur? It is important to remember that sunscreens do not work unless they are present on the skin surface. Thus, failure to coat the entire exposed skin surface with sunscreen and sunscreen removal caused by rubbing or sweating are 2 of the most common causes of sunscreen failure. Sunscreens also may fail if the film applied to the skin is too thin. A thin film, created by failure to apply the proper amount of sunscreen, yields skin areas that are left unprotected.

Formulation issues also are important. Some sunscreens have better skin substantivity, a term used by cosmetic chemists to explain the ability of the sunscreen to remain in place on the skin. Not all bottles of sunscreen with an identical SPF are equivalent. There is no substitute for the formulation knowledge of an experienced sunscreen manufacturer. By law, all products labeled with an SPF of 15 will provide consistent sun protection under optimal conditions. These optimal conditions include minimal perspiration, no water contact, low humidity, minimal activity, no wind, thick film application, and more. In reality, sunscreens are not worn under these conditions. The sunscreen in the bottle may be an SPF 15, but its performance on the skin may differ depending

COSMETIC CONSULTATION

on the formulation. I encourage my patients to avoid off-brand sunscreens in favor of well established branded products.

Sunscreens Cause Facial Shine and Do Not Work Well With Facial Cosmetics

Many people simply do not like the way sunscreen looks on the skin. Some women complain that their facial foundation does not perform well when applied over sunscreen and the sunscreen makes their face look shiny and greasy. Again, careful sunscreen selection is important; however, many women can get excellent sun protection by using a sunscreen-containing facial foundation. While most sunscreen-containing facial foundations do not have an SPF higher than 8 for aesthetic reasons, an SPF 8 facial foundation blocks 88% of received UVB radiation. This is excellent protection for casual sun exposure. Applying facial powder over the sunscreen can minimize the facial shine seen with some sunscreens. This decreases facial shine, increases the SPF of the sunscreen, and improves the ability of the sunscreen to remain on the skin.

Summary

Compliance is more important with sunscreens than any other topical over-the-counter product, except possibly toothpaste. Dermatologists should emphasize to patients that if they want to keep their teeth, they use toothpaste, and if they want to keep their skin, they use sunscreen in combination with protective clothing. I am reminded of the young child who asked which teeth he had to brush, and the dentist replied: "Only the ones you want to keep." Patients frequently ask me where they should apply sunscreen. I think the proper reply should be: "Only on the skin you want to be beautiful for the rest of your life." ■