

How to Encourage Sun Safe Behavior

Despite decades of education by dermatologists and public health officials about the dangers of UV radiation, many patients either do not use sunscreen or do not use adequately. Dermatologists, though frustrated, should not be surprised. Human beings by nature seem to continuously engage in behaviors that evidence shows can be detrimental to their health. For example, after years of public education initiatives and a significant shift in societal attitudes, still nearly 20% of American adults smoke cigarettes.

New York City based dermatologist Doris Day, MD notes that the majority of patients today are aware of the dangers of cumulative UV exposure and acknowledge the link between chronic sun exposure, premature skin aging, and skin cancer. Still, that knowledge may not motivate change. Careful to not judge patients, Dr. Day builds on patients' knowledge to try to motivate healthy behavior. "As their dermatologist, I speak for their skin," she says. "I make them a little more aware of this information."

The data regarding UV protection behaviors are particularly concerning. Only 40% of US households purchase sunscreen.¹ Just under a third of women (30%) and only 14% of men say they use sunscreen regularly. Half of American adults have had a sunburn in the past year.²

Darrell Rigel, MD is among dermatologists alarmed by rising skin cancer rates. "Among the various types of cancer, skin cancer is one where we have a clearly identified contributing factor: UV exposure. We can reduce exposure and thereby reduce the incidence of skin cancer," he says. He agrees with Dr. Day that the challenge is not informing patients of the risk. "The difficulty is using patients' knowledge of UV dangers to encourage behavior change, including regular and appropriate sunscreen use."

BEHAVIOR PROBLEMS

Clearly, education about the long-term health risks associated with various behaviors is not sufficient to motivate change.

AMERICAN ADULTS BEHAVING "BADLY"

- 18% Smoke
- 69% Are overweight or obese.
- 26% Drink excessively
- 50% Have had a sunburn

The fact is that our actions are not always based on rational arguments or assessment of facts.

Habits—beneficial and not—are difficult to change. Behavior modification is a complex and not-necessarily-intuitive process. Behavior can be understood in the context of the ABC model of Antecedent, Behavior, and Consequence, explains Sherry Pagoto, PhD, Associate Professor of Medicine in the Division of Preventive and Behavioral Medicine in the Department of Medicine at the University of Massachusetts Medical School. The consequence of an action will "often determine whether that behavior will be repeated again," she notes. "If you want to understand a behavior, it's important to understand that context."

Antecedents to sunscreen use may include noticing that it's sunny, seeing a sunscreen ad, or seeing someone else's sunburn.

Consequences that can be measured (think weight loss) or rewarded (think pay raises) or punished, may more obviously influence future behavior, Dr. Pagoto says. "The problem that we have with sunscreen is that, because it is a behavior that prevents something, the consequences may not be very tangible." There is no praise when a patient applies sunscreen, for example.

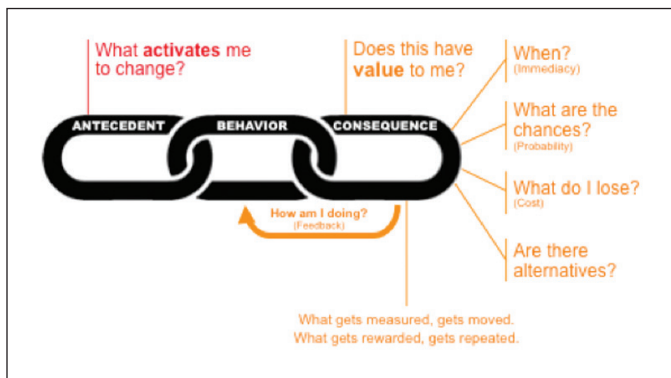
"There is never really a moment where you realize you got what you were shooting for when we're dealing with preventive behavior," Dr. Pagoto explains. Even an individual who does not develop

Neutrogena® brought together leaders in dermatology, photobiology and skin cancer advocacy for a discussion about how to reframe the narrative around sun protection and skin cancer. Looking at the challenge through the lens of behavioral psychology, participants considered the research on sunscreen efficacy, sunscreen use, skin cancer incidence, and high SPF with an eye toward pin-pointing problems and identifying meaningful solutions to help drive patient compliance.

The SUN Think Tank was convened to consider: 1.) Guidance on how to get patients to comply, 2.) How to apply behavior change techniques to discuss sun safe behaviors with patients.

Participants included expert dermatologists with specific expertise in skin cancer and the use of media to educate the public.

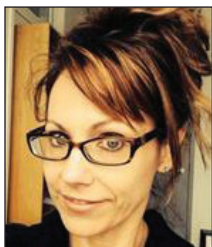
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skin cancer cannot necessarily point to sunscreen use as *the* reason for their health: “The consequences are fuzziier.”

In the case of UV exposure, the immediate risk of sunburn may motivate some patients to apply sunscreen. This is especially true of individuals who have had a significant, uncomfortable burn in the past. But that pain can be fleeting and not always sufficient to change behaviors long-term. Doctors know that the real concern is not the short-lived discomfort but the long-term skin cancer risk associated with each sunburn.

MISSED CONNECTIONS



Sherry Pagoto, PhD



Vivian Bucay, MD, FAAD

As scientists, business managers, possibly parents, clinicians are familiar with principles of behavior modification, including rewards and punishments. Yet so many find themselves consistently and earnestly entreating their patients to adopt UV safety measures with an academic argument. Most dermatologists appeal to the individual’s rational nature: “The incidence of skin cancer and death rates from skin cancer continue to climb.” “Every sunburn increases your risk for melanoma.” “A tan is really just sun damage.”

Yet, future risk does not always motivate a patient to protect their skin now—at least not in the ways that doctors may think. Consumers seem able to shrug off the risk of skin cancer-related death. From a patient’s perspective, “The statistics that we have around melanoma are very hard to understand in terms of what it means for me personally,” Dr. Pagoto says. “Unless statistics are very simple and extremely compelling, people don’t understand how to put those statistics into context.” Conversely, individuals can rationalize that they only have a risk of developing skin cancer, and among those who develop skin cancer, only a proportion die as a result.

Patients may be more responsive to an argument based on skin aging and wrinkling. “We’re all going to get wrinkles, but not all of us are going to die of melanoma,” Dr. Pagoto says.

Confounding the challenge of changing UV avoidance

behaviors is the fact that many patients view a tan as an immediate reward of UV exposure.

An outdoors person herself, Dr. Day makes a point not to vilify the sun and affirms its healthful benefits. She emphasizes that the danger is in unprotected UV exposure. She makes her argument fun. “I tell patients that I would love to eat a whole cake or a whole pizza, but I know that it’s not good for me, so I don’t do it.” Similarly, patients can safely enjoy outdoor activities by moderating their UV exposure with SPF, sun protective clothing, shade-seeking, and avoidance of direct midday sun.

WHAT WORKS

Even though dermatologists are frustrated when patients won’t use sunscreens, many keep using the same arguments. (Behaviors are hard to change!)

So how can dermatologists change the conversation about UV safety and encourage patients to adopt healthy behaviors?

Behavioral psychology identifies discomfort as a relevant motivator for change, says Dr. Pagoto. Discomfort takes the form of worry or concern (being a bad parent, looking bad, getting wrinkles). Cognitive dissonance is a form of discomfort, emerging when one’s actions are at odds with one’s personal values.

We know that some patients don’t use sunscreen at all. Among consumers who do use sunscreen, many use it only occasionally—at the beach or the pool—and they tend to under-apply, using less product than is appropriate or failing to reapply as needed. The ideal is to have patients use sunscreen on a daily basis, as part of the morning routine and especially whenever they step outside during the day.

Since statistics and long-term risk analyses don’t motivate behavior changes, clinicians must uncover new ways to present “risks”—especially among younger patients (think Millennials) who tend to feel invincible.

Consider this: When a series of public service announcements was launched a few years ago, the campaign had mixed results. Faced with warnings that one-in-five individuals will develop skin cancer, teenagers tended to believe that they would be one of the four not affected by the disease. However, a more effective PSA featured an attractive woman lying on her stomach on the beach; she rolls over and has the face of an 80-year-old with sun damage.

It may be possible to capitalize on that young patient’s fear of aging to encourage them to use sunscreens, Dr. Pagoto says. “Tie sunscreen use to other healthy behaviors, creating a concept of a healthy lifestyle that involves being active and eating healthy and using sunscreen.”

Dr. Day tells her patients that if they like being tan, they better love having wrinkles. She emphasizes the ounce of precaution/pound of cure rationale. “It’s amazing how much money patients are willing to spend for products to repair sun damage,” she says. “I tell them they could help prevent that damage in the first place by spending just a couple dollars on SPF and minimizing UV exposure.”

Someone who is otherwise healthy but tans can be put in a state of cognitive dissonance if they recognize that failure to use sunscreen doesn't make sense. The message can be presented as a positive: Regular use of sunscreen keeps you healthy and protects your skin just like regular exercise keeps you healthy and protects your heart. Patients may be encouraged to use sunscreen every day to protect their skin just as naturally as they brush their teeth each day for oral health.

The notion of cognitive dissonance may also be relevant to improving use of sunscreen by parents. If you care about your children's health, how can you send them out into the sun without protection? If you want to set a good example, how can you fail to use sunscreen yourself?

For Dr. Bucay, the UV discussion has shifted to a conversation about environmental protection. "I acknowledge to patients that talking to them about sun protection is challenging, because we associate the sun with pleasant experiences, such as vacations," she says. "My message is focused more on environmental protection: Talking about the effects of pollution and ozone resonates more with my patients." UV is a toxin like any other, and using sunscreen falls in line with behaviors like avoiding BPA and drinking filtered water. "After all, no one seems to be fond of pollution."

CONFRONT CONFUSION



Doris Day, MD, FAAD

Broad scale confusion around the benefits of high SPF persists, even in the medical community. The media will sometimes report there is "little difference" between SPF 30 and SPF 60. However, the science is very clear that higher SPF makes a positive practical difference in a real world setting. In simple if somewhat imprecise terms, most consumers use about half as much sunscreen per application as they should. As such, they essentially get half the SPF benefit (applying half as much SPF 30 as you should is roughly equivalent to applying the proper amount of SPF 15). Therefore, in actual use, a higher SPF product will offer more benefit to the individual.

Dr. Rigel feels strongly that dermatologists should recommend that patients use a minimum SPF 30, broad-spectrum, photostable sunscreen. "The focus on an FDA cap on SPF overlooks the science on high SPF," he asserts. "Some say that the incremental protection afforded by an SPF 50 sunscreen compared to an SPF 30 is negligible. But that percentage of UV filtering becomes exponentially beneficial over a lifetime of use," he says. "Knowing that patients don't use enough sunscreen, and they don't reapply often enough, we should recommend high SPF and emphasize the need to properly apply and reapply it."

Dermatologists should also evaluate products based on the quality of UVA protection they afford, according to Dr. Rigel. All "Broad Spectrum" sunscreens contain UVA and UVB filters;

FACTS TO CONSIDER

About 90% of nonmelanoma skin cancers may be caused by exposure to the sun.

(*Arch Dermatol.* 1996; 132(4):436-442.)

Consumers apply about half as much sunscreen as they should.

Teramura, et al. found that the mean application thickness under practical conditions was approximately 1mg/cm². SPF assays are based on an expected application of 2mg/cm². (*Clin Exp Dermatol.* 2012 Dec;37(8):904-8.)

Consumers don't see high SPF as a license to stay in the sun.

In a randomized study of healthy adults in France, Dupuy, et al. showed higher SPF had no influence on duration of sun exposure and offered better protection against sunburns. (*Arch Dermatol.* 2005 Aug;141(8):950-6.)

"Regular" sunscreen use, even on the face, is uncommon.

Only 18% of American men and 43% of American women regularly use sunscreen on the face; 20% of men and 34% of women regularly apply sunscreen to other exposed skin. (*J Am Acad Dermatol.* 2015 Jul;73(1):83-92.)

Teens are in danger.

About one-third of US teens aged 14 to 17 years had a sunburn during the past year. (National Health Interview Survey, United States, 2010) Just 1-2 painful sunburns can increase the risk of melanoma by 40%. (*AEP* 2008 Aug;18(8): 614-627.)

their relative efficacy may vary. While SPF offers mostly a measure of UVB filtering, it is often challenging to assess the degree of UVA filtering a formulation provides.

To complicate matters, some non-governmental organizations and consumer "advocacy" groups consistently question the safety and integrity of sunscreens. They go so far as to suggest that sunscreen use may actually be harmful to health.

Patients seeking an excuse to not use sunscreen may be swayed by negative sunscreen press. Be prepared to give patients facts and context.

"I inform patients that sunscreens are FDA approved drugs and they have to go through efficacy and safety testing

A NOT-SO-THICK SKIN

Skin, the largest organ of the human body, may be taken for granted. It's an amazing and resilient organ. As individuals, we literally watch it heal. So when doctors talk about sun damage, patients may not truly appreciate the risks.

Perhaps it's time to recast the skin as the hero it is. The dynamic skin barrier protects us from allergens, irritants, and pollution. Research shows that beyond causing damage to the skin layers, UV radiation can actually affect the immune system, leading to a reduction in immune response. Patients who think of a tan as "healthy" should think about this reality.

Today most people realize the importance of wearing a helmet to protect the brain when biking or skiing. Why not protect the skin for all it does?

before they can reach store shelves," Dr. Day says of combating media messaging. She notes that the FDA has yet to approve some agents available overseas, due to insufficient data. She also talks to patients about the possible agendas or biases that some may have, and she explores the quality of findings. "Sometimes these reports cite research in rats that has never been reproduced and never been published," she says.

When using skin cancer data and statistics to urge UV avoidance, maximize impact by focusing on a narrative, suggests Dr. Pagoto. Rather than using numbers in isolation, tell a story that resonates. When possible, she urges, "Tell a story about somebody who experienced a thing that the statistic is about. It's a little more accessible to people—especially if the narrative is about somebody who is just like they are."

A melanoma survivor herself, Dr. Bucay is "very open" about her experience with Stage 4 melanoma. "Patients real-

ize that if a dermatologist can get melanoma, anybody can, which translates to my being relatable to them."

MAKE AN IMPACT

"Knowledge doesn't always lead to behavior change. It doesn't even frequently lead to behavior change," Dr. Pagoto says. That doesn't mean that dermatologists shouldn't educate. It just means they have to go a few steps beyond. The best way to use knowledge to motivate change, Dr. Pagoto says, "Is to create a state in me that makes me want to behave in a specific way."

- Link positive sun protection behaviors to a happier/better lifestyle.
- Don't ignore the appearance argument. Spin the outcome to a positive. Instead of warning that UV exposure leads to skin damage, tell the patient that using sunscreen daily can reduce their risk of premature wrinkles.
- Identify ways to make sunscreen use jibe with the patient's values. Capitalize on cognitive dissonance, so that the healthy individual sees failure to use sunscreen as just as hazardous as smoking or not wearing a seat-belt.
- Help the dedicated parent recognize that failure to apply sunscreen to themselves and their children puts those kids at risk.

In the end, says Dr. Bucay, "Sun safety needs to be a daily habit and involves more than just using a sunscreen. It requires protective clothing, sunglasses, and using skin care products, such as topical antioxidants, that complement sunscreen."

1. Source: IRI, US Sunscreen Household Penetration, 52 weeks ending 6/29/2014, all major retail outlets
2. Holman, Dawn M. et al. Patterns of sunscreen use on the face and other exposed skin among US adults. *Journal of the American Academy of Dermatology*, Volume 73, Issue 1, 83 - 92.e1 ([http://www.jaad.org/article/S0190-9622\(15\)01352-3/abstract](http://www.jaad.org/article/S0190-9622(15)01352-3/abstract))

Elizabeth Tanzi, MD, Asks: As a melanoma survivor, I get frustrated when patients don't heed the sunscreen message. How can I use my experience to positively motivate change?

Dr. Pagoto: Share your own story with your patient—which can be very powerful. Especially if you had engaged in unfavorable behaviors such as tanning in the past, be willing to share this information with patients.

While it can be frustrating to encounter chronic tanners, don't throw up your hands. Think instead about potential underlying causes of the patient's behavior. There is research showing that tanning can be a behavioral addiction. Research also shows that many patients have underlying psychological issues that drive their tanning: Body dysmorphic disorder, behavioral addiction, high stress, and

seasonal affective disorder are all prevalent.

Remember that the definition of addiction is continued engagement in a particular behavior despite already experiencing negative consequences of that behavior. A person who has already had skin cancers yet continues to tan is a clear example of this.

There are short questionnaires/screeners dermatologists can use with patients to help identify underlying psychological concerns. It may be appropriate to engage behavioral health colleagues about these patients to determine whether they may be candidates for therapy.