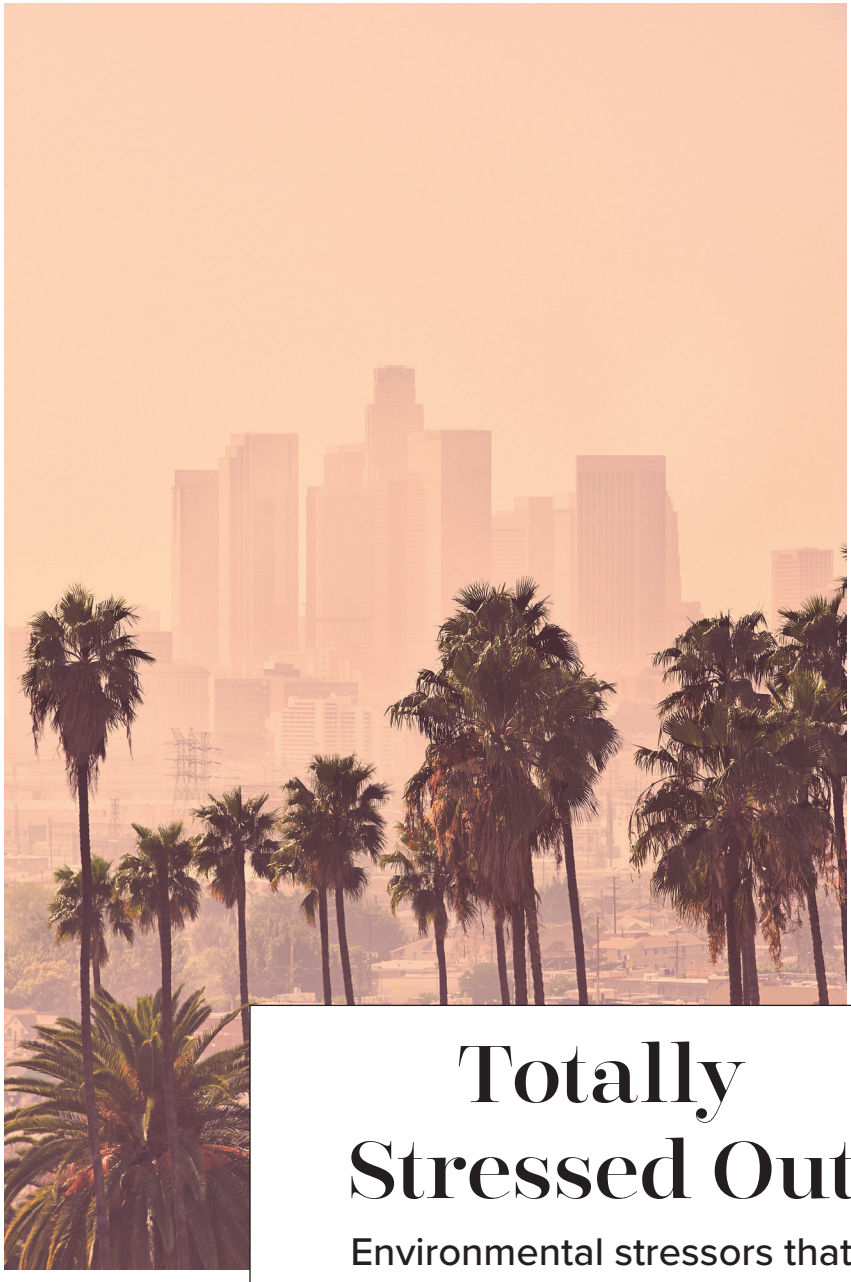

Totally Stressed Out

Environmental stressors that affect your client's skin health

by Shawna Rocha

THE SKIN IS THE FIRST DEFENSIVE BARRIER of the body when in contact with the environment and environmental stressors—physical, chemical, and biological. Because of this, skin barrier function and skin immunity go hand in hand. If the barrier is compromised, the natural immunity of the skin is also compromised. This limits the protection the skin can give to the body and how skin cells function. Skin protection is affected by any conditions that produce inflammation, disruption of the skin barrier, decreased ability to repair wounds, and increased risk of skin cancer.

Physical aggressors include sunlight, heat, and cold. Chemical irritants include pollutants in the air and water, alcohol, household cleaners, allergens, car emissions, secondhand smoke, and other compounds. Biological stressors include plants like poison ivy, bacteria, fungi, pollens, and pet dander. Air pollutants are believed to induce or exacerbate a range of skin conditions and inflammatory diseases (atopic dermatitis, cellulitis, and psoriasis), skin aging, acne, hair loss, and skin cancer risk. The intensity of physical, chemical, and biological aggressors and the length of exposure to them are also contributing factors in degraded skin health.

Understanding the specific impact of each environmental stressor enables you to create a strategy to counteract its effects on your client's skin and shield it from future damage. Let's look at the most common stressors and how your clients can combat damage.

TYPES OF ENVIRONMENTAL STRESSORS

The most common environmental factors that influence skin aging are sun radiation (UV, visible light, and infrared radiation), air pollution, temperature, smoke, diet, and lights from personal electronics (blue light). Some of these stressors are unavoidable with daily life (who doesn't use technology every day?) while others can be avoided.

Sun Exposure

The sun causes the most extensive damage to the body and skin, with UVA and UVB light the most relevant to skin health. Exposure to both types of UV radiation can damage the DNA in skin cells. UV radiation leads to oxidative stress, photoaging, and even skin cancer.[1] It affects collagen and elastin fibers, DNA integrity cell turnover, barrier function, and thinning of the epidermal and dermal layers.

Air Pollution

Exposure to air pollution can lead to oxidative stress (an imbalance of the body's free radicals and antioxidants), inflammation in the skin, and even skin cancer. Air pollutants exacerbate chronic conditions like acne, rashes, hives, eczema, psoriasis, and rosacea. These pollutants can break down the skin's natural collagen and elastin, contributing to premature skin aging.

Extreme Temperatures

Whether cold or hot, temperature can stress the skin. Cold weather can lead to dryness and flakiness, while excessive heat can cause dehydration and redness. Both cold and hot temperatures can affect barrier function and trigger skin conditions like atopic dermatitis.[2] Low humidity levels can result in dry skin, especially during winter months. High humidity, on the other hand, can exacerbate conditions like acne due to increased oil production.

Smoke

Tobacco smoke contains harmful toxins that can constrict blood vessels, reduce oxygen supply to the skin, and accelerate aging. In the long term, smoking can also dry out the skin and cause uneven pigmentation.[3]

Diet

What your client eats is also considered an environmental factor that can positively or negatively influence their skin health.[4] Poor dietary choices and inadequate hydration negatively impact skin quality. An unbalanced diet can cause inflammation and skin aging while dehydration can cause dryness, itchiness, and a loss in skin elasticity.

Technology

The constant presence of modern technology also exposes your client's skin to a never-ending stream of blue light emitted by screens (phones, tablets, and computers). Prolonged exposure can generate free radicals, contributing to skin damage.[5]

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SOLUTIONS TO COMBAT ENVIRONMENTAL STRESSORS

Given the inevitability of environmental stressors, it's important to help your client adopt an approach to protect their skin before it's damaged. They should choose products packed with antioxidants such as resveratrol and glutathione. Resveratrol helps limit premature aging from UV damage. It can neutralize free radicals and boost antioxidant levels so skin can better defend and repair itself. Glutathione functions as an anti-inflammatory agent and an antioxidant to protect against free radical damage. It also improves skin elasticity, reduces wrinkles and fine lines, brightens skin tone, and improves overall skin health.

Using a broad-spectrum sunscreen is crucial to protect your client's skin from UV radiation. Wearing a mineral-based sunscreen will physically block UV rays. The reapplication process is also imperative for fighting UV damage. Remind your client to reapply every two hours, even if they're indoors—UV rays can penetrate windows.[6] Wearing protective clothing, such as hats and sunglasses, to shield the skin from direct sunlight is also effective.

Lifestyle changes can help combat some aggressors. If your client is curious about quitting smoking, refer them to their primary care provider. Consuming antioxidant-rich foods and staying hydrated are also essential for maintaining healthy skin. While dietary advice is out of your scope of practice, you can refer them to a registered dietitian who can help them build healthy habits.

In this technology-driven age, exposure to blue light is also unavoidable. Reducing exposure to blue light by limiting screen time, using blue light filters, wearing reflective glasses when using electronic devices, and taking breaks will help reduce continuous exposure.

Finally, encourage your client to incorporate practices that help remove environmental pollutants from their skin. Regular cleansing and exfoliation can aid in removing pollutants that accumulate on the skin. Along with semi-occlusive products, locking in moisture to protect the skin is necessary. Protecting the skin maintains a healthy skin barrier, increases skin immunity, and promotes healthy cell function. Prioritizing skin care routines at home and in the treatment room, incorporating protection from the sun, and maintaining a healthy lifestyle are important to keep your client's skin looking and feeling its best.

Notes

1. Skin Cancer Foundation, "UV Radiation & Your Skin," last modified July 2022, skincancer.org/risk-factors/uv-radiation.
2. Jessica W. Hui-Beckman et al., "The Impact of Temperature on the Skin Barrier and Atopic Dermatitis," *Annals of Allergy, Asthma & Immunology* 131, no. 6 (December 2023): 713–9, sciencedirect.com/science/article/abs/pii/S1081120623005690.
3. American Osteopathic College of Dermatology, "Smoking and Its Effects on Skin," accessed May 2024, aocd.org/page/Smoking.
4. National Institute of Environmental Health Sciences, "Nutrition, Health, and Your Environment," accessed May 2024, niehs.nih.gov/health/topics/nutrition.
5. Jyoti Kumari et al., "The Impact of Blue Light and Digital Screens on the Skin," *Journal of Cosmetic Dermatology* 22, no. 4 (April 2023): 1185–90, onlinelibrary.wiley.com/doi/full/10.1111/jocd.15576.
6. Skin Cancer Foundation, "Ask the Expert: How Often Do I Need to Reapply Sunscreen if I'm Indoors All Day?" July 14, 2021, skincancer.org/blog/ask-the-expert-how-often-do-i-need-to-reapply-sunscreen-if-im-indoors-all-day.