



## How to look your best this year: Anti-aging skin strategies to share with your patient

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As summer approaches and we plan to spend more time outdoors, patients, as well as your family and friends, may turn to you for advice on skin care. The largest organ in the body, the skin can be a reflection of the individual's overall health and wellbeing. The increasing number of skin care lines and products available over the counter can be overwhelming and confusing. Furthermore, marketing and social media campaigns can be misleading about product efficacy and expected results. Patients often want to know what is worth their time and money.

Here is some advice you can share:

1. **Daily sun protection:** Sun damage is the number one cause of skin aging. Research has shown that exposure to UV radiation (UVR) increases the expression of matrix metalloproteinases (MMP), proteolytic enzymes that degrade collagen and elastic fibers. Histologically, skin exposed to UVR shows disorganization and reduction of these fibers fundamental to the structure of our skin.<sup>1</sup> Clinically, this translates into wrinkles and loss of skin volume as well as altered skin texture and dyspigmentation. Daily use of a broad-spectrum sunscreen over one year has been shown to reduce and improve photoaging.<sup>2</sup> I encourage my patients to wear a daily facial moistur-

izer with SPF30 regardless of weather, and re-apply every 2 hours if active outdoors. Foundation and other makeup may offer some protection, but I strongly suggest the application of a SPF 30 product beneath. A wide range of excellent sunscreens are available on the market. These range from the generic pharmacy moisturizer to more expensive creams that may offer tinted formulations. Ultimately, the choice is a personal one, and I recommend my patients find a cream that they like, can afford and will wear daily.

2. **Nightly retinol use:** Retinol products show the best evidence for reversing the effects of photo aging. *If my patients want to buy just one product, this is what they should invest in.* Since the early 1980s, clinicians prescribing trans-retinoic acid (tretinoin) for their acne patients began to notice an unexpected improvement in the skin roughness, dyspigmentation and facial wrinkles of their patients.<sup>3</sup> We now know retinoids, Vitamin A derivatives, exert their effect by binding nuclear receptors and influencing DNA transcription. Application of topical retinoids promotes cellular differentiation and extracellular matrix synthesis while downregulating MMP production. After regular use of tretinoin, histologic findings show epidermal thickening, dispersion of melanin granules and

increased dermal collagen synthesis.<sup>4</sup> Significant clinical improvement can be seen in 3-6 months.

Unfortunately, cutaneous irritation often limits patient compliance. Here are some tips:

- Start with a low-strength retinol. I usually start with tretinoin 0.025 percent cream. The strongest prescription retinol is tazarotene 0.1 percent. Multiple over-the-counter retinols are now available as well, such as adapalene 0.1 percent (which was previously prescription only).

- Only a small "pea-size" amount of cream is needed (i.e., half a fingertip). I encourage my patients to apply to their face, neck and back of the hands.

- Start by using only 3 nights a week and slowly increase the frequency. It is important to use at night because sunlight will inactivate the product.

- Tell your patients to expect some dryness initially. Encourage use of an emollient after application of the retinol and in the morning.

3. **A ceramide emollient:** Along with fatty acids and cholesterol, ceramides are key lipid components of the stratum corneum, our skin barrier. Aging is associated with loss of ceramides which leads to changes in skin texture and sensitivity. Topical ceramide use improves barrier function and reduces transepidermal water

loss; this translates into improved skin appearance and protection from environmental insult.<sup>5</sup> Again, this need not be an expensive product. Several affordable emollients with ceramides, including Cerave®, are available over the counter.

4. **Vitamin C:** A naturally occurring water-soluble antioxidant, ascorbic acid (vitamin C) provides protection from free radicals produced by UVR. It should be applied in the morning with sunscreen. Vitamin C is an essential cofactor for collagen synthesis as well as an inhibitor of tyrosinase, a key enzyme in melanin production. Use of vitamin C promotes collagen synthesis, offers photoprotection and lightens hyperpigmentation.<sup>5,6</sup> Unlike topical retinols, vitamin C is safe to use in pregnancy.

5. **Beyond topicals:** If your patient is interested in treatment options beyond creams, here is a brief summary of common and popular procedures. Neurotoxins, such as Botox®,

Dysport® and Xeomin®, improve the appearance of dynamic wrinkles, the lines that form with movement. This refers to the frown lines in the glabella, the forehead lines and the crow's feet (periorbital lines with smiling). These toxins work by disrupting synaptic terminals in the muscle and their effect lasts approximately 3 months. Fillers, such as Juvederm® or Restylane®, improve the appearance of static wrinkles, the lines present at rest (i.e. the nasolabial folds). Fillers restore volume as well in areas such as the zygomatic arch. Laser resurfacing and chemical peels are options for surface rejuvenation and improvement of fine wrinkles. A relatively newer technology is microneedling, also known as percutaneous collagen induction. Composed of multiple fine needles located on a barrel that rolls across the skin, the microneedling pen creates numerous punctures in the stratum corneum and superficial dermis that then triggers the release of growth factors which pro-

mote collagen and elastin formation.<sup>7</sup> Microneedling also offers the potential of enhancing transepidermal drug delivery of agents such as growth factors and peptides that may further assist in skin rejuvenation.<sup>7</sup> While the effect may not be as dramatic as that of an ablative laser, microneedling requires less downtime and is more affordable.

Several non-invasive options now exist to improve skin appearance, tone and texture. At the end of the day, sun protection is still the most powerful tool against anti-aging.

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