

Recommending Topical Moisturizers: Clinical Benefits and Practical Considerations

Over-the-counter products are the cornerstone of the skincare regimen for most patients. Here's what clinicians should know to make helpful recommendations.

By Jeanine B. Downie, MD

Numerous over-the-counter products from skin cleansers to lotions promise “moisturizing” benefits. But what exactly does that mean? Presumably, a moisturizing skincare product is able to increase the hydration of the skin and/or prevent loss of hydration to restore the epidermal barrier. This is an important function of OTC skincare, which can contribute to improved epidermal barrier function, promote skin healing, and reduce susceptibility to insult. Yet the degree to which any individual product achieves these goals varies tremendously from one to another.

Moisturizers contain lipids and ingredients with emollient, occlusive, and humectant properties. Moisturizers can serve numerous important clinical functions. These may include treatment and prevention of clinically “dry skin,” skin protection, reduction of treatment-associated skin irritation, maintenance of benefits of other therapies, and improvement of stratum corneum health and function. Moisturizing products achieve these effects through the combination of moisturizing, occlusive, and humectant ingredients. The quality of moisturizers varies tremendously, and it is important that patients and the physicians who make skincare recommendations thoughtfully assess

the merits of products. Use of suboptimal formulations can actually be detrimental—whether they contain irritating ingredients or undesirably shift the balance of moisture in the skin.

Beyond simply moisturizing, many mass-market OTC products now tout anti-aging effects. While most of these products likely provide little appreciable anti-aging benefit, a few potentially beneficial products are available. Patients must recognize that items they can purchase at the pharmacy or in the mall will not perform as well as items dispensed by a dermatologist. Still, for the patient with very mini-

Take-Home Tips. A moisturizing skincare product should be able to increase the hydration of the skin and/or prevent loss of hydration to restore the epidermal barrier. OTC skincare can contribute to improved epidermal barrier function, promote skin healing, and reduce susceptibility to insult; the degree to which any individual product achieves these goals varies tremendously. Moisturizers can function to treat and prevent clinically “dry skin,” protect skin, reduce treatment-associated skin irritation, maintain benefits of other therapies, and improve stratum corneum health and function. Use of suboptimal formulations can be detrimental—whether they contain irritating ingredients or undesirably shift the balance of moisture in the skin. ●

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mal signs of cutaneous aging, the patient looking to augment a skincare routine, or the patient who just wants a very good product without high expense, these agents are worth recommending.

To facilitate product selection and recommendation, ahead I highlight some worthwhile but perhaps not as well known moisturizing products that may be suitable for use by dermatology patients. Note that other formulations featuring the same ingredients may be available and of benefit, however, the discussion here is based on the specific formulations mentioned.

Popular and Pharmacy Brand Moisturizers

Several popular brands offer moisturizers that are quite effective at a reasonable price point. Aveeno Daily Moisturizing Lotion (Johnson and Johnson Consumer Companies) features colloidal oatmeal (see the article in the October 2010 issue, available online at PracticalDermatology.com), which has a history of use to calm inflammation and itch, as in oatmeal baths, but which is also known to be a natural moisturizer. Specifically, the high concentration of starches and beta-glucans¹ in colloidal oatmeal are thought to attract and hold water. Colloidal oatmeal is also featured in Aveeno Baby Soothing Relief moisture cream and Aveeno Eczema Care.

Also from Aveeno is a product marketed primarily to adult women but certainly suitable for use by individuals of all ages. Aveeno Nourishing 24-Hour Ultra Hydrating Whipped Souffle contains colloidal oatmeal along with shea butter, cocoa butter, and antioxidants, including vitamin E, as well as other exotic plant and fruit extracts. The product's consistency is similar to that of a light cream; It is non-greasy and may rub into the skin more readily than some other creams.

While cocoa butter has not shown consistent results for treatment of specific conditions, such as reduction or prevention of stretch marks,² it has a long history of reliable use as a moisturizer. A very recent study confirms the anti-inflammatory and anti-tumor effects of moisturizing shea butter fat compounds.

Topically applied vitamin E—as well as vitamins C and A (retinol)—have been shown effective for reducing signs of photoaging, as well as for treating inflammatory dermatoses, acne, pigmentary disor-

Possible Benefits of Moisturizers

- Treat and Prevent Dry Skin
- Provide Skin Protection
- Reduce Therapy-associated Irritation
- Prolong Benefits of Therapy
- Improve Stratum Corneum Health and Function

ders, and wound healing.⁴ The concentrations necessary to achieve these effects have not been clearly elucidated. Beyond possible cutaneous benefits, antioxidants may be added to skincare formulations to function as natural preservatives.

This formulation contains glycerin (also known as glycerol), a humectant that has been shown to be ineffective or only moderately effective when applied in combination with certain oils.⁵ However, the formulation also contains capric/caprylic triglyceride, an emollient ester that has been shown to reduce TEWL.⁶ This non-ionic surfactant aids in solubilization of both oil and water phases⁷ and likely serves to buttress the glycerin in the product.

Preservatives and fragrance are also included, which may be clinically relevant for certain allergic and “sensitive skin” patients.

Original Keri lotion (Novartis Consumer Health) is now 50 years old and is still a good choice for basic moisturizing. The product features five moisturizers: mineral oil, glycerin, sunflower seed oil, *aloe barbadensis* (aloe vera is a newer more popular designation), and vitamin E oils. In mouse models of AD, skin treated with glycerin-based moisturizer achieved rapid hydration compared to untreated skin.⁸ Aloe is a traditional botanical therapy with anti-inflammatory properties that has been shown beneficial in the management of atopic dermatitis.⁹ The barrier repair and maintenance effects of sunflower seed oil were recently demonstrated in a study of preterm infants in Bangladesh. Use of inexpensive sunflower seed oil was associated with 41 percent lower risk of developing nosocomial infections compared to controls.¹⁰

CeraVe Lotion, Cream, and Cleanser (Coria Laboratories) are ceramide-dominant topical formulations that feature multi-vesicular emulsion (MVE) technology. Similar to liposomes, MVEs are cocentric

lipid shells designed to facilitate slow release of cholesterol and lipids. The formulations contain three types of ceramides, along with cholesterol, and dimethicone, a commonly-used occlusive.¹¹ Dimethicone within a product can sometimes contribute to a sticky or tacky residue, but that is not the case with these formulations. One trial showed that use of CeraVe moisturizing cream and cleanser in conjunction with fluocinonide cream 0.05% reduced disease duration, time to disease clearance, and symptoms compared to use of bar soap plus the same corticosteroid.¹²

CeraVe PM facial moisturizing lotion is the newest addition to the line. It contains glycerin, caprylic/capric triglycerides, and niacinamide along with ceramides and cholesterol. Niacinamide has been used for the management of hyperpigmentation^{13,14} and is shown to reduce signs of photoaging, including yellowing, wrinkles, blotchiness, and dark spots.¹⁵ It is anti-inflammatory with evidence of benefit in acne and rosacea.¹⁶ It appears to support barrier function by reducing TEWL.^{16,17}

The product also contains hyaluronic acid, a

Problem-Focused Physician-Dispensed Cosmeceuticals

While some patients will be satisfied with the products described in this article, some will be interested in cosmeceuticals. A few new or relatively new products that feature moisturizing vehicles are described ahead.

Skin Lightening. From Syneron, elure Advanced Skin Lightening Technology features a novel natural enzyme called Melanozyme. The product comes in a two-compartment jar. One side contains the natural enzyme and the other contains a bioactivator. While I have not had enough patients use the product to assess its clinical efficacy, the prospect of a hydroquinone-free formulation that directly targets melanin is welcome.

The formulation contains glycerin, caprylic triglycerides, ester of jojoba oil, and citric acid (generally used as a preservative or pH adjuster). The non-fragranced formulation has a strong but tolerable smell.

Photodamage/Photoprotection. Neova Total DNA Repair (PhotoMedex) is suitable for use on the face, neck, and back of hands—all of which are subject to photodamage. The product is specifically formulated for daytime use, as it contains the DNA-repair enzyme photolyase, derived from *Anacystis nidulans* (A phytoplankton), that when exposed to light converts cyclobutane dimers into their original DNA structure.²⁶ Ergothioneine (EGT), a natural antioxidant, appears to scavenge reactive oxygen species generated by both Type I and Type II photosensitization and suppresses both TNF- α expression and MMP-1.²⁷ These agents are delivered via liposomes termed photoliposomes by the manufacturer. Other ingredients in the formulation include shea butter, dimethicone, squalane, evodia fruit extract, algae extract, lethicin, glycerin, duglycerin (which buttresses glycerin), and the preserva-

tive polysorbate 60. Extract of evodia fruit has demonstrated strong anti-inflammatory properties when topically applied.²⁸

- Vivite Daily Facial Moisturizer with Sunscreen SPF 30 (Allergan) is a light, oil-free formulation containing glycolic acid, olive leaf extract, vitamin C, vitamin E, glycerin, dimethicone, green tea extract, pomegranate extract, licorice root extract, and antioxidant superoxide dismutase. Olive leaf extract is antioxidant and shown to have anti-melanoma potential.³⁰ Licorice root extract has been used to reduce hyperpigmentation.¹⁴

The sunscreen ingredients are octinoxate (UVA and UVB blocker), oxybenzone (UVA and UVB blocker), octisalate (UVB). The product comes in a bottle less than 3oz., making it an ideal travel item.

Anti-Aging. Dermal Repair Cream from SkinMedica is a rich, oil-free moisturizer ideal for use on normal-to-dry skin (but probably not oily skin). It contains high concentrations of vitamins C and E, sodium hyaluronidate (a form of HA), and algae extract. Also incorporated are dimethicone, *aloe barbadensis*, algae extract, squalene, oat extracts, vitamin A, sunflower seed oil, glycerin, and other fruit and grain seed extracts.

- Revale Skin Intense Recovery (Stiefel/GSK) with coffeeberry is a light, oil-free, once daily moisturizer with sunscreen. The concentration of coffeeberry, a botanical extract with significant antioxidant capacity,³¹ is 1.5%.

The formulation contains glycerin, dimethicone, capric triglyceride, aloe leaf extract, licorice root extract, vitamin E, grape seed extract, soybean protein, and cholesterol. Grape seed extract is a potent antioxidant that, when applied topically, has been shown to support wound healing,³² among other benefits. Soy isoflavones are shown to provide anti-oxidant and possible anti-carcinogenic actions when applied topically.³³

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humectant that increases stratum corneum moisture content. It may be worthwhile to address possible confusion among patients regarding topically applied HA and HA fillers. In so far as it attracts water into the stratum corneum, topical HA may temporarily reduce the appearance of very fine lines, but it will not remotely approximate the effects of HA injection. Furthermore, good skincare is advised to enhance and maintain outcomes of cosmetic procedures. An HA-containing formulation—which may be appropriate for post-procedure skincare—poses no advantage over other suitable options simply because it contains HA.

Specialty Brand Moisturizers

Trixera Selectiose Emollient Cleansing Bath (Avene) is an oil-based, hypoallergenic, and paraben-free bath oil containing Avene thermal spring water, ceramides, sterols, and essential fatty acids to restore the hydro-lipidic barrier and protect skin from moisture loss. It also contains glycerin, coconut oil, and castor oil. It is hydrating, non-sticky, and easily absorbed and may be particularly beneficial for patients with atopic dermatitis, psoriasis, ichthyosis, xerosis, and lichen simplex chronicus. Selectiose is a proprietary ingredient said to reduce hypersensitivity and irritation. Recent studies with topical coconut oil show that it has anti-inflammatory and antioxidant actions and that it increased the rate of wound healing in mice.¹⁸ The bath gel can be rinsed off or left on the skin. Emollient Cream, Balm, and Cleansing Gel are also available in the Trixera line.

Specialty brand Kiehl's Crème de Corps Lightweight Body Lotion offers a patient-friendly alternative to the company's original Crème de Corps, a moisturizer that is very thick and potentially leaves a sticky residue. The Lightweight Lotion formulation has a light scent and the benefit of providing broad spectrum (UVA and UVB) SPF 30 photoprotection. Moisturizing ingredients are primarily botanically derived and include sesame seed oil, olive oil, jojoba oil, apricot oil, and avocado oil. Topical jojoba is anti-inflammatory,¹⁹ and there has been substantial study of the beneficial effects of olive oil on the skin, both as an ingested nutrient

and as a topically applied moisturizer.²⁰ Comprised primarily of triglycerides and olive oil, it also contains alpha-tocopherol, phenol compounds, carotenoids, squalene, phytosterols, and chlorophyll.²⁰ Rich in vitamins A, D, and E, avocado oil has been studied as a wound-healing agent in rats, in which it was shown to increase wound healing by three days relative to controls.²¹

Topical antioxidants in the formulation may work synergistically with sunscreens to enhance photoprotection. Because of the number of ingredients, including fragrance, the product may be a second-line option for patients with very sensitive skin.

Hydrofilia Fluid Body Cream (Lierac) is a good moisturizer for very dry, keratotic skin. The formulation rubs in well, making it suitable for use on various body sites, including the hands, feet, and neck. With urea, mineral oil, glycerin, dimethicone, and vitamin E, it contains both emollients and humectants. Often applied topically as an anti-aging therapy, topical vitamin E is also an anti-inflammatory antioxidant.⁴ Urea has concentration-dependent keratolytic effects. These desquamating properties may provide a smoother skin surface feel and possibly facilitate the delivery of other topical agents. Urea is associated with decreased transepidermal water loss and some protective effects against known skin irritants.²²

Formulated with three essential fatty acids, Philosophy's When Hope is Not Enough Omega 3-6-9 Replenishing Body Lotion is a lightweight, hydrating formulation suitable for use all over the body, though not on the face.

Fatty acids have demonstrated numerous cutaneous benefits and have been used as adjuncts in the treatment of atopic dermatitis, psoriasis, acne vulgaris, systemic lupus erythematosus, non-melanoma skin cancer, and melanoma.²³⁻²⁵ They are shown to promote barrier function and wound healing and inhibit inflammation.²³

The formulation also contains peptides, which have been investigated for possible anti-aging benefits, though the clinical relevance of peptides in many formulations is unclear. Other ingredients include glycerin, olive oil, sunflower seed oil, squalene, linseed oil, vitamin E, lethicin (an emulsifier and emollient), soy-

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19 Common Moisturizer Ingredients

Allantoin	Glycerin	Stearic Acid
Botanicals	Glyceryl Stearate	Stearyl Alcohol
Carbomer	Mineral Oil	Titanium Dioxide
Cetyl Alcohol	PEG-100 Stearate	Tocopheryl Acetate
Colorants	Petrolatum	Water
Dimethicone	Preservatives	
Fragrance	Propylene Glycol	

—The Personal Care Products Council's CosmeticsInfo.org

bean and rice bean wax, and retinyl palmitate. Recent speculation about the safety of retinyl palmitate, which has emollient properties, has caused some to question the use of this chemical, which is classified as Generally Recognized As Safe (GRAS) for use in nutrients and supplements by the FDA and affirmed as safe by the Cosmetic Ingredient Review (CIR) Expert Panel. A small amount of dimethicone is also used in this formulation, which has a light fragrance.

Supporting Patients' Needs

Despite the quality and benefit of cosmeceutical products and prescription moisturizers, the vast majority of patients continue to rely on OTC products for their skincare needs. The patient/consumer confronts a nearly overwhelming array of options across a wide price range. The reality is that beneficial formulations are available at different price points, and patients can find very good options on the market. Dermatologist should be prepared to provide product advice to their patients to facilitate meaningful product selection and use. ■

Dr. Downie has served as a consultant/lecturer or researcher for Allergan, Inc., Johnson & Johnson, SkinMedica, and Stiefel/GSK.



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