

A CONSUMER'S PERSPECTIVE ON SKIN CARE

Know your ingredients. Read labels.

BY BRITTANY TAYLOR HOLOHAN, ASSOCIATE PUBLISHER OF AOC



I am in no way an official authority on skin care or makeup, and I have no credentials to rattle off. My knowledge comes from my experience as a consumer and years of educating myself on these topics. Growing up, I read beauty magazines. (OK, it might have been a bit of an obsession, but it taught me a lot at the impressionable age of 12.) I continue to read

magazines (*New Beauty* and *MarieClaire* are my go-tos), but over the years, I have added beauty blogs, Instagram, websites, and Youtube. More recently, I have come to rely on *CRST's* sister publications *Modern Aesthetics* and *Practical Dermatology* and their digital counterparts *DermTube* and *MA TV*, which I am lucky to have access to. I can view expert content from key doctors in dermatology and aesthetics and get their thoughts on products, surgery, treatments, and trends—much like the experts in ophthalmology we feature on *Eyetube.net*.

THE BAD NEWS

Although these sources have been critical in my quest for beauty knowledge, trying products and talking to other women are keys to finding the essential items to include in your everyday routine. There is an insane amount of information available, and what makes it difficult is that manufacturers of these products in the United States can pretty much claim whatever they want and slap it on the front of the bottle with insufficient research or proof. Crazy, right?

With the exception of color additives and a few prohibited substances, cosmetics companies may use any ingredient or raw material in their products without government review or approval, according to 2005 FDA rules. By law, companies can leave some chemical ingredients off the product labels, including those considered to be trade secrets, components of fragrance, and nanomaterials.

THE GOOD NEWS

There are a handful of things consumers can do to better their appearance and some rules to stick by to achieve the skin and look they hope for. It may include a lot of trial and error and, importantly, the ability to be realistic about outcomes, which may be the hardest part. Oh and the hit in the wallet could be damaging until they find what works.

Basics

There are a few basic principles to stick to in developing one's skin care arsenal. It should start with a nondrying cleanser, followed by a gentle toner and a moisturizer. Most important is a moisturizer with sunscreen. If I hear one thing the most from the experts, it is absolutely about using sunscreen and avoiding prolonged sun exposure. Perform these steps every morning and night. Now, if skin care were really that simple, there would be no point to this article, and I would be signing off.

More Complicated

This is where things get complicated (and when the jars and bottles start multiplying). Cleansing and moisturizing are the simplest steps, like sleep and water. Next, is the need to exfoliate (2-4 times per week), add a serum with potent antioxidants to your routine, use a targeted eye cream, and apply retinols or melanin inhibitors to address aging and other concerns. Moisturizer could be one of the hardest items to personalize considering the options available and range in skin types. Should one use gel, serum, oil, lotion, or cream? Is your head spinning yet?

Serial Purchasers

I can guarantee almost every reader has opened up the medicine cabinet or vanity of a wife, sister, daughter, or neighbor (sneak) and found rows of skin care and makeup products. Generally speaking, most "serial consumers" are women. As far as consumers and beauty products go, we could be considered the ultimate suckers. It is so easy to be convinced to jump on Amazon and hit one-click checkout. Then comes buyer's remorse, when after a couple of days or weeks, we realize we have been duped. Here's a tip I wish I would have known years ago: Do not browse the skin care aisle at a drugstore or specialty shop. Spend money on treatments and medical grade skin care that actually work—or a pair of shades to protect those eyes.

PRODUCTS FOR THE EYE AREA

What should you as eye care professionals know about consumer skin care and makeup products for use around the eyes? How can you cut through insufficient claims and be an authority?

KEY SKIN CARE INGREDIENTS

Antioxidants, like extracts, vitamin C, retinol, niacinamide, and ubiquinol, all protect the skin from free radical damage.

Retinol is one of the only proven ingredients to boost collagen production and increase elasticity. Retinol is effective at managing acne¹² and eczema and improving discolorations associated with wrinkles and sun damage.³ *Retinol*, the name for the entire vitamin A molecule, cannot communicate with a cell until it has been broken down into retinoic acid, for which skin cells have a receptor site. This relationship between retinoic acid and skin cells allows a type of communication in which the cell is told to function normally before sun and free radical damage.⁴ Retinol's value is pretty impressive: it can create better, healthier skin cells, provide antioxidant support, and increase the amount of substances that enhance the skin's structural elements.⁵ Keep an eye on packaging though; any container that lets in air (like jars) or sunlight (clear containers) just won't cut it—something that applies to most state-of-the-art skin care ingredients. Similarly, tretinoin (retinoic acid) can improve skin cell maturation after skin has been damaged; tretinoin improves living cells so they can shed normally.^{4,6}

Niacinamide has also been clinically proven to reduce the appearance of wrinkles. Niacinamide, also known as *vitamin B3* and *nicotinic acid*, is a potent cell-communicating ingredient that offers multiple benefits for aging skin.⁷⁻¹³ It improves the skin's elasticity, dramatically enhances its barrier function, helps erase discolorations, and revives the skin's healthy tone and texture. Topically applied, it has been shown to increase ceramide and free fatty acid levels in skin, prevent skin from losing water content, and stimulate microcirculation in the dermis.^{7,11} It also has a growing reputation for being able to treat an uneven skin tone and to mitigate acne and postinflammatory hyperpigmentation.¹⁴⁻¹⁶

Coenzyme Q10 (ubiquinone) has been clinically proven to have an effect on skin and the appearance of wrinkles, most notably by reducing ultraviolet light damage and stimulating healthy collagen production. The latest research suggests that the topical application of CoQ10 has antioxidant and anti-inflammatory effects.¹⁷⁻¹⁹

Hyaluronic acid can boost the skin's moisture content, reduce inflammation, have cell-communicating abilities, and help prevent moisture loss.^{20,21}

Vitamin C is a potent antioxidant shown to increase collagen production, reduce the appearance of skin discolorations, strengthen the skin's barrier response, enhance the skin's repair process, reduce inflammation, and help skin better withstand exposure to sunlight, whether protected by sunscreen or not.^{22,23} Its proven most stable and effective forms are ascorbic acid, L-ascorbic acid, ascorbyl palmitate, sodium ascorbyl phosphate, retinyl ascorbate, tetrahexyldecyl ascorbate, and magnesium ascorbyl phosphate.^{24,25} Note that vitamin C can spoil quickly when exposed to air and light, so keep this in mind when purchasing.

Cell-communicating ingredients have the ability to tell a skin cell to look, act, and behave better, more like a normal healthy skin cell would, or to stop other substances from telling the cell to behave badly or abnormally.²⁶ Ingredients with cell-communicating ability include retinol, retinaldehyde, retinoic acid, epigallocatechin-3-gallate, eicosapentaenoic acid, niacinamide, lecithin, linolenic acid, linoleic acid, phospholipids, carnitine, carnosine, adenosine triphosphate, adenosine cyclic phosphate, most peptides, and *Pyrus malus* (apple) fruit extract.²⁷⁻²⁹

Alpha hydroxy acids, such as glycolic and lactic acid, and beta hydroxy acid, also known as *salicylic acid*, exfoliate and dissolve dead skin

cells in the skin's uppermost layers.³⁰

ALERT: Any form of acid could potentially be harmful, and there are eye creams that contain these. Tell your patients to avoid alpha, beta and polyhydroxyl acids around the eyes.

Peptides can exert a benefit beyond that of a water-binding agent, but three criteria must be met: the peptides must be stable in their base formula, they must be paired with a carrier that enhances absorption into the skin, and they must be able to reach their target cell groups without breaking down.³¹⁻³³ Achieving this goal is no easy feat but one that cosmetic scientists are predicting will have significant potential in the realm of anti-aging skin care ingredients. Peptides cannot plump lips or lift sagging skin, lighten dark circles, or eliminate puffy eyes. You will see all of these claims and more on products with peptides, but they are not supported by published, peer-reviewed research.

1. Biswas S, Mondal KK, Dutta RN, Sarkar DK. Comparative evaluation of the efficacy of four topical medications individually or in combination to treat grade I acne vulgaris. *J Indian Med Assoc.* 2009;107(4):219-222.
2. Thielitz A, Gollnick H. Topical retinoids in acne vulgaris: update on efficacy and safety. *Am J Clin Dermatol.* 2008;9(6):369-381.
3. Bertin C, Zunino H, Lancin M. Combined retinol-lactose-glycolic acid effects on photoaged skin: a double-blind placebo-controlled study. *Int J Cosmet Sci.* 2008 Jun;30(3):175-182.
4. Mukherjee S, Date A, Patravale V. Retinoids in the treatment of skin aging: an overview of clinical efficacy and safety. *Clin Interv Aging.* 2006;1(4):327-348.
5. Kafi R, Shin H, Kwak R, Schumacher WE. Improvement of naturally aged skin with vitamin A (retinol). *Arch Derm.* 2007;143:606-612.
6. Kikuchi K, Suetake T, Kumasaka N. Improvement of photoaged facial skin in middle-aged Japanese females by topical retinol (vitamin A alcohol): a vehicle-controlled, double-blind study. *J Dermatol Treat.* 2009;20(5):276-281.
7. Callender VD, St. Surin-Lord S, Davis EC, MacLin M. Postinflammatory hyperpigmentation: etiologic and therapeutic considerations. *Am J Clin Dermatol.* 2011;12(2):87-99.
8. Jerajani HR, Mizoguchi H, Li J, et al. The effects of a daily facial lotion containing vitamins B3 and E and provitamin B5 on the facial skin of Indian women: a randomized, double-blind trial. *Indian J Dermatol Venereol Leprol.* 2010;76(1):20-26.
9. Sivapirabu G, Yiasemides E, Halliday GM, et al. Topical nicotinamide modulates cellular energy metabolism and provides broad-spectrum protection against ultraviolet radiation-induced immunosuppression in humans. *Br J Dermatol.* 2009;161(6):1357-1364.
10. Chiu A, Kimball AB. Topical vitamins, minerals and botanical ingredients as modulators of environmental and chronological skin damage. *Br J Dermatol.* 2003;149(4):681.
11. Tanno O, Ota Y, Kitamura N, et al. Nicotinamide increases biosynthesis of ceramides as well as other stratum corneum lipids to improve the epidermal permeability barrier. *Br J Dermatol.* 2000;143(3):524-531.
12. Bissett DL, Oblong JE, Borge CA. Niacinamide: A B vitamin that improves aging facial skin appearance. *Dermatol Surg.* 2005;31(7 Pt 2):860-865.
13. Greutens A, Hakozaiki T, Koshoffer A, et al. Effective inhibition of melanosome transfer to keratinocytes by lectins and niacinamide is reversible. *Exp Dermatol.* 2005;14(7):498-508.
14. Gehring W. Nicotinic acid/niacinamide and the skin. *J Cosmet Dermatol.* 2004;3(2):88.
15. Kumar Mitra A, Krishna M. In vivo modulation of signaling factors involved in cell survival. *J Radiat Res.* 2004;45(4):491-495.
16. Ahn KS, Moon KY, Lee J, Kim YS. Downregulation of NF-kappaB activation in human keratinocytes by melanogenic inhibitors. *J Dermatol Sci.* 2003;31(3):193-201.
17. Inui M, Ooe M, Fujii K, et al. Mechanisms of inhibitory effects of CoQ10 on UVB-induced wrinkle formation in vitro and in vivo. *Biofactors.* 2008;32(1-4):237-243.
18. Muta-Takada K, Terada T, Yamanishi H, et al. Coenzyme Q10 protects against oxidative stress-induced cell death and enhances the synthesis of basement membrane components in dermal and epidermal cells. *Biofactors.* 2009;35(5):435-441.
19. Fuller B, Smith D, Howerton A, Kern D. Anti-inflammatory effects of CoQ10 and colorless carotenoids. *J Cosmet Dermatol.* 2006;5(1):30-38.
20. Schlesinger T, Rowland Powell C. Efficacy and safety of a low molecular weight hyaluronic acid topical gel in the treatment of facial seborrheic dermatitis final report. *J Clin Aesthet Dermatol.* 2014;7(5):15-18.
21. Lynde CW, Andriessen A, Barankin B, et al. Moisturizers and ceramide-containing moisturizers may offer concomitant therapy with benefits. *J Clin Aesthet Dermatol.* 2014;7(3):18-26.
22. Parish WE, Read J, Paterson SE. Changes in basal cell mitosis and transepidermal water loss in skin cultures treated with vitamins C and E. *Exp Dermatol.* 2005;14(9):684-691.
23. Yamamoto Y. Role of active oxygen species and antioxidants in photoaging. *J Dermatol Sci.* 2001;27(suppl 1):S1-4.
24. Leveque N, Muret P, Makki S, et al. Ex vivo cutaneous absorption assessment of a stabilized ascorbic acid formulation using a microdialysis system. *Skin Pharmacol Physiol.* 2004;17(6):298-303.
25. Sauermann K, Jaspers S, Koop U, Wenck H. Topically applied vitamin C increases the density of dermal papillae in aged human skin. *BMC Dermatol.* 2004;4:4-13.
26. Somanath PR, Kandel ES, Hay N, Byzova TV. Akt1 signaling regulates integrin activation, matrix recognition, and fibronectin assembly. *J Biol Chem.* 2007;282(31):22964-22976.
27. Miller LS, Modlin RL. Toll-like receptors in the skin. *Semin Immunopathol.* 2007;29(1):15-26.
28. Li J, Zhang YP, Kirsner RS. Angiogenesis in wound repair: angiogenic growth factors and the extracellular matrix. *Microsc Res Tech.* 2003;60(1):107-114.
29. Boudjellal M, Voorhees JJ, Fisher GJ. Retinoid signaling is attenuated by proteasome-mediated degradation of retinoid receptors in human keratinocyte HaCaT cells. *Exp Cell Res.* 2002;274(1):130-137.
30. Lynde CW, Andriessen A, Barankin B, et al. Moisturizers and ceramide-containing moisturizers may offer concomitant therapy with benefits. *J Clin Aesthet Dermatol.* 2014;7(3):18-26.
31. Robbins PB, Oliver SF, Sheu SM, et al. Peptide delivery to tissues via reversibly linked protein transduction sequences. *Biotechniques.* 2002;33(1):190-2, 194.
32. Lim J, Chang M, Park S, et al. The penetration enhancement and the lipolytic effects of TAT-GKH, both in in-vitro, ex-vivo, and in-vivo. *IFSCC Magazine.* July 2004:153.
33. Bauza E, Dal Farra C, Portolan F, Domloge N. New laminin peptide for innovative skin care cosmetics. *Cosmetics & Toiletries.* March 2003; 43-52. www.cosmeticsandtoiletries.com/formulating/function/repair/913961.html. Accessed July 29, 2015.

The eye area is one of the first places to show signs of aging, and many factors play into this, including sleep, diet, sun exposure, and genetics. Home in on the patient's main concerns (eg, reducing the appearance of bags, dark circles, wrinkles, or pigmentation). Specific issues will yield a different series of recommendations, which can range from topical agents to surgical treatments. If a patient chooses topical products, remind him or her that there is no miracle and that the best thing for skin is plenty of sleep, a healthy diet, and lots of water (not what patients want to hear).

Eye Puffiness

Puffy eyes are commonly due to fluid buildup in the body. The best way to tackle this problem is lifestyle changes such as getting more sleep and reducing salt and/or alcohol intake. Allergies could also be a factor, in which case antihistamines help. Puffiness around the eyes may also be a result of sun damage, and a moisturizing eye cream with sun protection factor (SPF) like SkinCeuticals Physical Eye UV Defense SPF 50 or Clinique Superdefense with SPF would be advantageous. There is a chance the puffiness your patient is noticing is actually fat pads that have formed under the eyes as a result of aging. In this case, surgery is the only option.

Dark Circles

This problem is probably the most daunting one to tackle. Patients can purchase an eye cream and hope for the best, but in my experience, the holistic or surgical approach is the only solution. Another option is to camouflage the area with makeup. All that is needed is a great concealer (a shade lighter than the rest of the skin) with light-reflective properties and knowing how to apply it properly. My go-to product is Yves Saint Laurent Touché Éclat Radiant Touch, or patients can use a drop of highlighter in their favorite concealer. Suggest that patients visit their nearest Sephora, Ulta, or department store and ask for help. It is important to see the results in natural, yellow, and white light. Do not judge anything by how it looks in fluorescent light.

If your patient insists on a cream recommendation, you first need to address if the dark circles are blue or brown. Blue circles are a result of thin skin around the eye, which results in transparency, and brown circles are a result of hyperpigmentation caused by sun damage and genetics. To combat thin skin around the eye, many eye creams contain caffeine which constricts blood vessels and boosts circulation. Hyaluronic acid eye creams will plump the skin to pull skin away from the pooled blood. Eye creams with retinol will thicken the skin to conceal the shadows. Or, one can freeze a spoon, lie back, and apply. The cool metal will cause the blood vessels to constrict, lessening their appearance, which will also decrease puffiness (but who has time for that). If the patient wants a treatment, devices using radiofrequency can increase the production of collagen and tighten skin.

If the dark circles are a result of hyperpigmentation, an eye

cream with skin-lightening ingredients is the way to go. The most potent and commonly used ingredient is hydroquinone, a prescription-only agent with some safety concerns. Experts say it is the most effective against hyperpigmentation, melisma, and sun damage. Safety concerns have led to research into other ingredients that could be useful in the fight against under-eye circles and hyperpigmentation, including niacinamide, vitamins C and K, green tea, licorice, soy proteins, and much more.

SPF and Dark Circles, Sagging Skin

Very few eye creams contain an SPF that prevents skin from both thinning prematurely (exposing blueness) and tanning (getting browner). This leaves the skin around the eyes vulnerable to sun damage that will absolutely make dark circles, puffiness, and wrinkles worse. Recommend mineral-based sunscreen like zinc oxide and/or titanium dioxide for around the eyes.

Just like the face, skin around the eye responds beautifully to generous amounts of antioxidants and skin-repairing ingredients. Patients must keep expectations realistic, especially when it comes to products that claim to "lift" skin. A topical cream or gel can "tighten" to a certain degree, but no skin care product can magically pull up drooping eyelids or sagging under-eye bags like a pair of socks. Realistically, surgery, lasers, and injections are the way to go with this issue. Alternatively, tell patients to check out Lids By Design (www.contoursrx.com), think masking tape for eyes.

WHAT DO I USE?

- **Start Over Active Eye Cream** by Sunday Riley
- **Physical Eye UV Defense SPF 50** by SkinCeuticals
- **Regenerative Anti-Aging Lotion** by Algenist
- **Resist Barrier Repair Moisturizer** by Paula's Choice
- **Lytera Skin Brightening Complex** by SkinMedica
- **Sleep Tan Mask** by James Reed
- **Pure One-Step Camellia Cleansing Oil** by Tatcha
- **Priming Moisturizer** by Glossier
- **Retinol .25%** by Skinmedica
- **Luna Sleeping Night Oil** by Sunday Riley
- **TNS Serum and Complex** by Skinmedica
- **C E Ferulic Combination Antioxidant Treatment** by SkinCeuticals
- **Vitamin C&E** by Skinmedica
- **Good Genes Treatment** by Sunday Riley
- **Crealine H2O** by Bioderma
- **Ceramic Slip Cleanser** by Sunday Riley

A HARD DOSE OF REALITY

Most eye creams are not necessary. Almost every cream “specially formulated for the eye area” is essentially a moisturizer with a couple other special-sounding ingredients to convince consumers into thinking it is the holy grail of eye creams. Some products have ingredients that are *not* acceptable for the eye area like fragrances and irritants. In fact, “specially formulated for the eye” usually means a higher price tag and a fancier jar. Also worth mentioning, most eye creams are improperly packaged, which allows key ingredients to become unstable and ineffective. Always opt for airtight and dark-colored bottles; avoid jars and clear bottles.

There is still hope. The eye area can benefit from a basic moisturizer if it is safe and gentle (free of fragrances and irritants). Any product loaded with antioxidants, skin-repairing ingredients, skin-lightening ingredients, anti-inflammatory ingredients, and effective emollients will yield results. Plus, those ingredients do not have to come from a product labeled as an eye cream. If your patient is happy with his or her skin cream, recommend giving it a shot around the eye. I am not sold on eye creams, and I am embarrassed to admit how much trial and error it took to realize that. Now that there is substantial research available on clinically proven ingredients, I realize one needs to be smart about what to invest in. It is all about the ingredients, not the claims made in the description.

BE A LABEL READER

The eye area can benefit from a series of ingredients including antioxidants, skin-repairing and soothing ingredients, and cell-communicating ingredients (see *Key Skin Care Ingredients*). Because the skin is thinner and more sensitive around the eye, it is important to be aware that what works for one person could very likely unleash an unpleasant rash and ruin another’s weekend. Remind patients that ingredients are important for eye health and that most products out there are not approved by the FDA. In fact, most skin care products are not FDA approved and can contain chemicals that could potentially be unsafe. Advise patients to avoid products with irritating ingredients like plant oils and fragrances. This is why it is so important to read labels, know ingredients, and consider the concentrations of ingredients. Some products may list retinol, but if it is the last item on a long list, it is not of a potent concentration. Far more important is the delivery system, package stability, and other ingredients paired with the retinol. Patients should ask for samples, if they are at the right place (Sephora, Nordstrom, Ulta).

The safest products for use in and around the eye are those that are ophthalmologist tested (not to be confused with hypoallergenic). Most eyeshadows, mascaras, and eyeliners are not ophthalmologist tested and can potentially be damaging to eyes, yet there really is not much out there in terms of warning consumers. The FDA has no authority to require companies to test personal care or cosmetics products for safety, even

though just about everyone is exposed to them. According to the agency, the FDA conducts premarket reviews only of certain cosmetic color additives and active ingredients that are classified as over-the-counter drugs. The best thing your patient can do is read labels and throw out eye makeup every 3 to 6 months. Natural or organic products will spoil faster because of their lack of preservatives. To check product safety, patients can visit www.ewg.org/skindeep, a nonprofit, nonpartisan organization dedicated to protecting human health and the environment. My trusted source for tracking ingredients is www.paulaschoice.com/cosmetic-ingredient-dictionary.

MAKEUP

I’ll be the first to admit I love makeup. A few things to note when talking to patients are to keep it clean. This means wash makeup brushes regularly and apply product with clean hands. Mineral-based makeup could be the safest bet around the eye, and fragrance-free products will help patients avoid irritating reactions.

As for specific eye makeup, it is worth looking into paraben-free products and those that are tested by ophthalmologists and dermatologists. Websites now list products that are paraben free or doctor approved (check out Nordstrom’s website). Keep in mind “sensitive to eyes” really does not mean much. A newer trend to watch out for is “tightlining” eyeliner, which is the act of lining the inside water line of the eyelid, directly under lashes and in between lashes with eyeliner to give a full eyelash effect. Personal experience: yes, it is lovely, but there are terrible bacterial dangers of this type of application, not to mention the inevitable red eye from makeup’s seeping into the eye. It is so important to remind your patients to take off makeup before bed and to make sure their eyes are clear of makeup residue—especially for contact lens wearers! I use a compounded eye whitener (Alphagan [brimonidine; Allergan] and rewetting drops) to battle red eye, because I wear eye makeup regularly. It works wonders.

CONCLUSION

Tell your patients not to jump on the latest and greatest product or treatment bandwagon. Wait until a product has been on the market and tested, has proven clinical results, and is recommended by a doctor. There is literally a new deep ocean algae or snail slime product released daily. It is hard not to be swayed—I can attest to that—but tell your patients to read ingredients, ask for samples, and try things out. It is an ongoing quest for beauty! We cannot be born having it all, so here is to trying! ■

Brittany Taylor Holohan

- associate publisher of AOC
- bholohan@bmctoday.com