

# Anti-aging Skin Care--Essential Ingredients

By Rob and Carol S. Trow

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In earlier days, skin care products were selected by features and benefits that were blasted from ads and labels, using words such as "softens," "moisturizes," "smells wonderful" or "provides instant anti-aging remedies." Individuals were more concerned about how products felt and smelled than what they could actually do for their skin. Now the ingredients in home care and professional products can determine whether an item is appropriate for use in targeted professional treatments and in home skin care protocols. Serious, results-oriented estheticians need to know each ingredient in the lines they offer, as well as what they do, when each is appropriate or inappropriate for a client, and how to use and recommend them. The following ingredients are critical to any anti-aging treatment plan and home care recommendation.

## Antioxidants

Antioxidants are molecules that can safely terminate the oxidation chain reaction before cells are badly damaged. They neutralize free radicals turned loose by the sun's UVA rays by donating one of their electrons to each, transforming them into nondamaging molecules. This activity is usually known as free radical scavenging by skin care professionals. Antioxidants help prevent tissue damage that could potentially lead to aging and disease. They are important for repairing photodamage and providing protection, but do not block UVB rays and, in and of themselves, don't repair wrinkles. Ample amounts of antioxidants must be formulated into anti-aging products or the aging process will always outpace the corrective treatments. They are prevention-oriented, as well as treatment-oriented ingredients.

Current literature is replete with news about the "best" antioxidants. It seems that every month a new hot, important, best, most effective antioxidant is discovered. However, the best is actually not one single antioxidant, but rather products that contain a group of them, such as pomegranate, coffee berry, lycopene, grape extracts, idebenone and others. These have withstood both the test of time, as well as scrutiny by reputable medical journals and independent university research studies. Currently, the most important vitamin antioxidants in treatments are vitamins A, C, E and beta-carotene.

**Vitamin A.** Otherwise known as retinoids, vitamin A is a fat-soluble vitamin that is not present in the body. It is important not only to general health systems, but also for the skin, due to its role in the normal differentiation and proliferation of cells. Therefore, it must be added to the human diet for systemic health through the ingestion of fish liver oils, egg yolk, milk, liver and various vegetables. Also, vitamin A should be applied topically in order to perform its essential purposes. The sun depletes the skin of vitamin A, and this is one of the reasons those who expose their skin often to the sun age faster than those who do not. Every good skin care system has a vitamin A product due to its significance in preventing and healing sun damage. Vitamin A is the single most important ingredient to prevent, restore, normalize and help repair damaged skin. This should not be news to any in the skin care profession, because the efficacious effects of vitamin A are well known.

The formulation of vitamin A in a line, as well as the form of the base ingredient, is very important to the stability of the product. New technology has allowed vitamin A to meet its potential for performance in topical products in the forms of retinyl palmitate, retinyl acetate and retinol, along with the more traditional prescription form, retinoic acid.

**Recommending vitamin A.** Because the body does not manufacture vitamin A, skin becomes deficient through time. For that reason, it is a very important and necessary ingredient in all quality anti-aging product lines. However, it may cause redness and irritation if applied in doses higher than cell receptors can tolerate. If you recommend a higher dose than the client can tolerate initially, a mild irritation may occur for a few days. To counter this, start low and go slow, fully informing your client of the risks and rewards. Arming your client with information helps allay concerns.

The dosage is initially low, and it should be applied three or four times a week. This may be the only dosage suited to the client's needs. If the skin indicates the need for a higher dosage, the applications per week should be increased as cellular receptors are developed in the skin until it is applied twice daily. If a higher strength is still indicated, the next product strength should be recommended. Some clients will respond with minor irritation and redness at the beginning of each step up. Generally, the "start low and go slow" method allows skin to adjust and enjoy the new infusion of vitamin A in its cells with little irritation and absent negative response. It supports obvious positive changes.

**Vitamin E.** Although vitamin E is a highly effective oil-soluble antioxidant that protects collagen from destruction by UV rays, it is extremely sensitive to damage and inactivation when exposed to free radicals. One of the important roles of its sister, vitamin C, is to reactivate it to its original form, enabling it to work against free radicals. Vitamins C and E are intertwined in their activity and are important teammates in protecting and treating the skin from sun damage.

**Vitamin C.** This water-soluble vitamin antioxidant, aside from its role in reactivating vitamin E, is important for protecting the lipid structures of cells, preventing the oxidation of vitamin A, and is an effective tyrosinase inhibitor, preventing hyperpigmentation by slowing down the production of melanin. Vitamin C is a normal component in the skin, but is utilized first for other bodily functions and is not produced by the body, so the skin is vulnerable to deficiency. It must be included in diet, in supplement, and in topical products for the skin. There are several forms of vitamin C, including L-ascorbic acid, which has the appearance of water. To be its best, it should be mixed just before it is used because it loses some of its effectiveness as it oxidizes, and turns amber or orange. A newer, effective form of vitamin C is ascorbyl tetraisopalmitate, a fat-soluble, stable and more penetrating form.

**Recommending vitamin C.** Vitamin C is one of the most valuable ingredients in professional prevention and rejuvenation care, but its successful delivery into the skin has spurred on constant research. The problem: The long-proven most effective form—ascorbic acid—quickly degenerates with exposure to air and light. Research has come far in defining the formulation of stable vitamin C delivery. In professional care, however, the use of ascorbic acid often is recommended for maximum delivery of fresh, highly potent vitamin C. To do so, a mix-before-use product is preferred. A series of vitamin C treatments provides the best results when coupled with at-home product use of a fat-soluble form, such as ascorbyl tetraisopalmitate.

**Other important antioxidants.** Other important antioxidants in formulations are beta-carotene—a precursor to vitamin A—selenium, superoxide dismutase and alpha lipoic acid (thiotic acid), all proven soldiers in the fight against aging. These ingredients are important to anti-aging, and their roles and benefits warrant study by skin care providers.

## Exfoliants

Exfoliants are believed by many to be a necessary component to maintain skin's health. However, it is important to remember that the horny layer of the skin must be thick and compact because it provides important protection against the environment and best exfoliates naturally. On the other hand, belated exfoliation creates hyperkeratotic conditions, prevents ingredient penetration and results in dull skin with poor texture and an aged appearance. The best policy is a compromise by using mild resurfacing to create a natural, healthy exfoliation that removes only excess cells while balancing the health of the skin with topical and professional regimens.

**Glycolic vs. lactic acid.** Lately, there's a new sheriff in Hydroxyville. Many experts, including the authors, are taking a second look at the use of glycolic acid for exfoliating peels. More and more skin care experts are advocating the use of lactic acid instead. When administered properly, lactic acid peels are gentle, but highly effective. A comparison of glycolic and lactic acids will tell the story: Glycolic acid has smaller molecules than lactic acid. A good thing? Not really.

Because of this small molecular size, glycolic acid penetrates more quickly than lactic acid, making it more difficult to control. Lactic acid lays on the skin's surface for a longer period of time, allowing it to work more extensively on the epidermis, which allows the skin's responses to be gentler. A slower response allows more effective neutralization, producing less damage. The skin is a natural protection against environmental damage and it is crucial to be extremely careful about how it is exfoliated—less is more.

Lactic acid's longer activity on the epidermis allows for enhanced softening of the surface skin and less damage to the dermis. It can be used on a wider range of Fitzpatrick Skin Types, with lower incidences of stinging and hyperpigmentation. The overall and anti-aging results of treatment series by lactic and glycolic acid are similar.

For that reason, lactic acid should be considered for use during resurfacing treatments.

### **Peptides**

Peptides are one of the newest ingredient groups to hit the anti-aging skin care scene and are stimulating many studies that have shown significant results. They are highly respected for their ability to penetrate the skin and activate their target, increasing the production of collagen and elastin. Although long-chain proteins cannot penetrate the epidermis due to molecular size, peptides can. They are proteins that are synthesized to their most useable form in order to affect the dermal layer. Peptides are molecules that have been built up from smaller protein molecules—amino acids—by binding one amino acid to another, forming a short, penetrable chain. In this form, they are highly efficient in stimulating the healing process and triggering the rebuilding of the dermal matrix.

They turn on the fibroblasts responsible for these activities, acting as keys to the biochemical pathways. This starts the chain reaction for building and repairing the dermis—the basic requirements for anti-aging success.

**Recommending peptides.** Ideal skin is healthy and strong, and its dermal matrix quickly responds to treatment and healing. Peptides support these activities by stimulating the matrix materials, and following is the ideal recommendation for pre- and post-series and -surgical care.

For ideal pre-care, the regimen should be started a minimum of four to six weeks before the treatment or start of the series. During a series, peptides support the goals of the treatments. After the series, treatment or surgical care, it is best to continue peptides indefinitely in order to support a healthy matrix. But peptides are not only for dermal support. More and more purposes are being defined, with many new ones being synthesized as you are reading this. The good thing is that most are supported by clinical studies, and their uses take esthetic-level care out of the realm of wishing and into actuality. The importance of peptides is right up there with vitamins A, C and E.

A natural problem with peptides is that, although their results are obvious, they are accumulative in treatment and take time, which poses a problem for the client who wants instant gratification. It is important to fully educate this client, and to take before pictures, as well as follow-up pictures at the 90-day mark and later. She will, of course, be hearing comments from her friends, but it's best that she see the changes and acknowledge them in your presence.

### **Growth factors**

Growth factors are proven to enhance epidermal growth and keratinization; they directly stimulate the proliferation of epidermal cells through a response by receptors on the cell membrane. This initiates activities that eventually progress to cell division and proliferation. The problem for women is that epidermal growth factors (EGF) are androgen-dependent, and the low level of androgen

in females results in a lack of EGF, potentially allowing skin to age more quickly. Concurrently, EGF acts as a super-antioxidant, and also resolves inflammation, making it an important tool in the esthetician's toolbox of product ingredients.

### **Results-oriented rejuvenation**

These ingredients are the must-haves in a results-oriented anti-aging product line, and are the tried and true basics to successful rejuvenation. Those who choose product lines must take care to not be swayed by the hottest, newest ingredients that hit the market and leave these behind. Watch them, look for studies and proof, then try them. You can look back at those that were popular last year or the year before, noting that they are off the hot list now. Instead, know that reliability is the key, scientific studies are of utmost importance, and formulation and packaging are the answers. The anti-aging attack is focused on a team of reliable and stable formulations of established and trusted ingredients in a well-designed treatment plan. Those mentioned are synergistic components in the battle, and their effectiveness has a long history of study and proof on which to rely.

More and more estheticians are being confronted with clients requesting information on the newest ingredients and the products that contain them. That ingredient may be relatively unproven in its benefits or inappropriate for their skin, but once advertisers have implanted the seeds of desire, the consumer seeks it out. Estheticians not only must know the contents of the products they sell, but also must at least learn a bit about other options, and be able to share why they have chosen not to jump on an ingredient bandwagon, just as they must support the benefits of those products they recommend.

Success in rejuvenation is the result of well-chosen professional and home care products that work through needs-based plans with very important synergy. They march clients' skin toward visible rebuilding and repair through the carefully orchestrated activities of anti-aging ingredients designed into highly results-oriented and well-formulated products.