

START WITH VITAMIN A

BY JENNIFER BARNES



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Scientists have developed retinol (the alcohol form of vitamin A) for use in mainstream cosmetics to offer Retin A-like benefits at a lower cost and without a prescription.

THE REJUVENATING PROPERTIES of retinoids (treatments containing derivatives of vitamin A) have been highly regarded for almost two decades. They help smooth wrinkles, correct pigmentation, reduce oiliness and acne, eliminate roughness and stimulate collagen production.

"The major dermatological benefit of topical retinoids is that they regulate the way cells divide and the position of those dividing cells," explains Mr. John Kulesza, director of research and development at Young Pharmaceuticals, Inc. "They can eliminate what we call 'dysplasia'. As we grow older some skin cells being produced are not aligned in the same way as younger skin. This results in a dull complexion and is one of the things that makes older skin look older."

Tretinoin (better known as Retin A[®]) is the acid form and most potent derivative of vitamin A. Retinol is the alcohol form of vitamin A. It is found in animal foods such as fish oils and liver and has only recently been developed to use as an ingredient in cosmetics.

"Retinol is a form of vitamin A alcohol that was not previously used as a commercial cosmetic ingredient because it was extremely unstable. In other words, it degraded easily when exposed to oxygen, light or heat and became ineffective," says Mr. Kulesza. "These stability issues have now been better addressed and retinol has subsequently become a popular ingredient in cosmetics."

"In a sense, retinol is a weak form of Retin A. It will do everything that Retin A does but not as potently," says Dr. Bernard Raskin, an associate clinical professor at UCLA.

The beauty of retinol is that its use is not regulated in the same way as Retin A. Drugs, like Renova[®] and Retin A, contain a biologically active form of vitamin A making them prescription drugs only. Retinol is available without a prescription in over-the-counter cosmetics. The skin may not metabolize retinol as immediately as Retin A which actually has advantages.

"One of the beauties of retinol is that it is an easier product to use in conjunction with other products," says Dr. Raskin. "Retin A is problematic in that you can't combine it with other products and it makes the skin extremely sun sensitive. Retinol is far more forgiving. You can combine it with vitamin C and glycolic acid and it doesn't make the skin as sun sensitive. It offers many advantages in terms of ease of use and accessibility."

Retinol is now used as a major ingredient in many fading creams (to help even out pigment), anti-wrinkle creams, facial moisturizers and sunscreens. Some products combine retinol with vitamin C and glycolic ingredients.

Vitamin C and glycolics each represent their own category of therapeutic agents for treatment of the skin. "Vitamin C is an antioxidant that neutralizes free radicals reversing some skin damage as well as stimulating collagen production," says Dr. Israel Dvoretzky, clinical professor of dermatology at Yale University. "Hydroxy acids [glycolics] are like a micro peel for the skin that remove dead cells and make it easier for treatments to take effect."

"Optimally these treatments should be used together because they all do something different to contribute to rejuvenating the skin," explains Mr. Kulesza. "You can argue that being an anti-oxidant, vitamin C may not only help protect the skin from free radicals but also inhibit oxidation of the retinoid as it diffuses into deeper layers of the epidermis, thus improving its bioavailability. Glycolics may enhance the penetration of the retinoid and the anti-oxidants and simultaneously enhance collagen production."

"I think retinoids would probably be the most effective of these treatments on their own because we know so much about them," says Dr. Raskin. "Vitamin C is almost as effective but there are so many forms of it on the market; some of them are good and some of them aren't. Retin A and retinol are basically the same product you'll find bottle to bottle, company to company."

The major side effect associated with retinoid use is sensitivity to sunlight. "Retinoids are not innocuous. If you love the sun and absolutely need to go to the

beach on a sunny day you shouldn't use retinoids," says Mr. Kulesza. "Unfortunately you will be depriving yourself of an excellent agent but using retinoids and getting a lot of sun exposure may increase the risk of sun damage to the skin."

Says Dr. Dvoretzky: "Because retinol makes the epidermis a little thinner, there is a tendency for irritation to occur in the sun after use. On top of that, the sun actually makes any retinoid less effective so it is best for patients to use retinol products only at night."

As they thin the epidermis (outer layer of the skin), retinoids can also cause dryness and irritation in some patients. "When we thin the epidermis we are reducing the barrier that keeps water inside our skin thus increasing the possibility of moisture loss," explains Mr. Kulesza.

However, as the gentlest form of topical vitamin A, retinol is a less risky alternative. "You may get a little bit of dryness and irritation with Retin A but most people don't seem to have any problems with retinol," says Dr. Raskin.

Taking vitamin A during pregnancy can be harmful to the fetus and so, to be on the safe side, it is advisable for pregnant women to consult their physicians before using any product containing retinol.



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