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Skin Deep; The Thing About Retin-A: It Works

By SALLY WADYKA

THE beauty aisles of a typical drugstore are a veritable fortress stacked with lotions and potions that promise to turn back the clock, rejuvenate the skin and restore a youthful glow. Their labels list an arsenal of ingredients --alpha hydroxy acids, antioxidant vitamins, green tea, copper, caffeine, soy, peptides, among many others.

Yet within the walls of products and tiers of claims, one ingredient still stands out: Retin-A. It is available in prescription-strength products, including generic formulations, and under brand names like Retin-A Micro, Renova, Avage and Tazorac. Its less potent over-the-counter cousin, retinol, is found in products on department and drugstore shelves.

According to the Mintel Global New Products Database, nearly 300 retinol-containing cosmetics have hit the market since 2003. The latest crop includes Neutrogena Healthy Skin Anti-Wrinkle Intensive Eye Cream, RoC Retinol Correxion Deep Wrinkle Daily Moisturizer with SPF 15, Avon Anew Line Eliminator Neo-Retinol Line Plumper SPF 15, MD Skincare Alpha Beta Daily Face Peel and overnight creams like SkinCeuticals retinol 0.5 and 1.0 formulas.

With so many doctors and beauty companies on a hunt for the next big anti-aging product, why do Retin-A and retinol still have so much appeal? The answer, many dermatologists say, is simple: They work.

Even better, unlike most other beauty products with lofty claims, there's proof that they work.

"To my knowledge, this is the only drug for which there has been crystal-clear demonstration that it works on the molecular level," said Dr. John J. Voorhees, the chairman of the dermatology department at the medical school of the University of Michigan.

Prescription Retin-A first became popular more than 20 years ago as an acne treatment. But doctors and patients soon noticed another benefit, one with enormous impact on those who were looking for a way to keep skin vibrant and smooth.

Retin-A users reported improvements in skin texture, including diminished wrinkles and brown spots. Early studies soon confirmed its anti-aging effects. In 1988, Dr. Voorhees and his colleagues at Michigan published the first double-blind study of Retin-A's effect on photodamaged skin and found that all 30 patients who completed the 16-week study showed statistically significant improvement.

"There is so much historical evidence that this ingredient works better than anything else," said Dr. Joel L. Cohen, clinical assistant professor of dermatology at the University of Colorado and a consultant for OrthoNeutrogena, the maker of Retin-A Micro. And the effects are more than superficial. "It actually works to remodel skin on a cellular level," Dr. Cohen said.

Retin-A, the drug known generically as retinoic acid or tretinoin, is derived from vitamin A. Retinol, a less potent form of Retin-A, also has some strong science to support its effectiveness.

Skin cells contain retinoid receptors that help regulate how the cell functions. As people age, their cells behave more erratically. "But consistent use of Retin-A helps normalize the cells," said Dr. Min-Wei

Christine Lee, a dermatologist in Walnut Creek, Calif.

Retin-A can improve skin texture and fade dark spots and freckles because it causes skin cells to turn over more rapidly. It shrinks dilated pores and improves cell turnover within the pores so they are less likely to clog and become blackheads and whiteheads. But what has earned Retin-A its long-held reputation is its ability to affect the retention of collagen.

Collagen is what gives skin its structure, firmness and elasticity. Repeated sun exposure breaks down collagen and, with age, cells produce less and less collagen to repair the damage. Skin wrinkles, sags and loses fullness.

Retin-A does double duty in helping to boost collagen. According to research at Michigan, it has the potential to stop photoaging before it starts. "The retinoids prevent the rise of collagenase after UV exposure," Dr. Voorhees said. Collagenase is what breaks down collagen.

But regular use of a retinoid product also increases the amount of new collagen formed, research has found, and that new collagen will last for years.

Susan Hobbs, 56, of Royal Palm Beach, Fla., a retired firefighter, said she spends a lot of time outdoors, and has been using Retin-A for about 15 years. "And I really don't have a lot of wrinkles, compared to other people my age," she said.

"I think that using Retin-A has made a big difference," Ms. Hobbs said. "I think if I didn't use it, the sun damage would have really taken its toll."

The results are not just cosmetic. Dr. Voorhees said that retinoids have been used to treat precancerous skin cells. Studies show that after two years of use, those abnormal cells returned to normal.

So if Retin-A is so effective and so well studied, why isn't everyone using it? Many dermatologists blame a lack of patient education. "It's one of the most misunderstood drugs," said Dr. Kenneth Beer, a dermatologist in Palm Beach, Fla., and a clinical investigator for Allergan, the maker of prescription Avage and Tazorac. He is also an Allergan shareholder. People use Retin-A too much, use it too often, experience negative side effects and then give up on it too soon, doctors say.

The problem with Retin-A is that it may actually make skin look worse -- with redness, flakiness and peeling -- for up to eight weeks. "But by 24 weeks, patients will see dramatic, marked improvements," Dr. Lee said.

Ms. Hobbs said when she first started using Retin A, she broke out with severe acne. "I remember I called the doctor and told him I was going to stop using it because my face had never looked worse," she said. But her doctor advised her not to give up. "And he was right," Ms. Hobbs said. "In another couple of weeks, my skin cleared up."

Manufacturers have come up with ways to make it more tolerable, less irritating and more effective. Brand-name prescription versions contain emollient moisturizers and have more-advanced delivery systems for getting the active ingredient into the skin. These additions are the main difference between generic Retin-A and the pricier name-brand versions (a large tube of a name brand will run about \$150 versus about \$80 for a generic).

But in every case, patience and common sense are required. "You need to take six weeks to ramp up very slowly, but people will glob it on every night from the start and then call their doctor in a panic that their skin is red and peeling," Dr. Beer said.

Doctors generally recommend using no more than a pea-size dab for the entire face. They advise using the product once every three nights (or once a week if skin feels irritated) for a couple of weeks, then

every other night, eventually working up to every night if the skin can handle it.

Dr. Cohen cautions that Retin-A is not recommended for pregnant women or people with rosacea (a condition that causes skin redness). He said it is wise to limit its use with other potential irritants, like glycolic acids and vitamin C. Many doctors recommend applying a moisturizer over Retin-A (especially the generic versions) to help soothe skin, but suggest first waiting at least 20 minutes for the product to be absorbed.

Doctors also warn that newly irritated skin requires vigilant sun protection, and there are some concerns that waxing while using Retin-A may tear the skin.

"I can't say there's anything on the horizon that will rival Retin-A," Dr. Cohen said. "It's exciting to see all the research going into this area, but kind of funny that the thing we're still recommending most is something that's 25 years old."

Expecting? What's Safe

LONG before outgrowing her pre-pregnancy wardrobe, a woman who is expecting will need to revamp her pre-pregnancy skin care routine.

"Products that seemed perfectly benign before you got pregnant can actually be harmful to the fetus," said Dr. Joel L. Cohen, a dermatologist in Englewood, Colo. "You need to pay attention to labels and ask your doctor if you're not sure."

Skin also changes during pregnancy, possibly becoming oilier, drier or more prone to breakouts and brown spots because of hormonal flux. But the minute you find out that you are pregnant, update your products as necessary.

WHAT TO AVOID

Because Retin-A works on a cellular level and affects skin cell DNA, there is a theoretical risk to a developing fetus. Ditch this, retinol, vitamin A derivatives and any products with these ingredients.

Although acne flare-ups are likely, because of surging hormones, doctors do not recommend using benzoyl peroxide (over the counter or prescription) to treat it.

WHAT IS CONSIDERED SAFE

Glycolic or lactic acid may be used to help gently exfoliate skin and improve cell turnover during pregnancy. Glycolic acid is derived from fruit and lactic acid from milk.

Sunscreen ingredients also appear to be safe. And since sun exposure can exacerbate melasma, the so-called mask of pregnancy that shows up as brown patches, it is more important than ever to keep skin protected. SALLY WADYKA

Correction: December 21, 2006, Thursday The Skin Deep column on Nov. 30 about the anti-aging effect of retinoid products referred imprecisely to one of them. Retin-A is a brand name for the ingredient tretinoin, part of a family of related products known as retinoids. It is not itself an ingredient.