

## More Hope In A Jar? The Anti-Aging Skin Care Promise

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From magazines and newspapers to web pages and online blogs, it is hard to miss the promises being made for products designed for beauty and skin care. And the most tantalizing promises of all? Those that touch not just our vanity, but also our fears of growing old.

It's an approach that seems to be working. According to Euromonitor International, anti-aging products now account for close to 9.8 billion dollars of the skin care market. That's a nearly 109% increase since 1997.

But is the drive to deliver on the promise of still more hope in a jar bringing us any closer to finding the fountain of youth? The answer, it seems, depends on whether you are looking for a trickle or a gusher.

"A lot of satisfaction has to do with the condition of your skin before you start an anti-aging treatment," says NYU Medical Center dermatologist Sumayah Jamal, MD. If you have pretty much never used anything on your face, she says, you are probably more likely to see results simply because you are doing something for your skin.

And that observation, in fact, may explain at least some of the reported differences in effectiveness — differences recently highlighted in a Consumer Reports investigation. Researchers found the current crop of anti-aging creams fall short of delivering on their promises — a conclusion shared by at least some doctors.

“Many of these products are claiming changes in the skin that would automatically classify them as drugs,” says NYU professor and dermatologist Rhoda Narins, MD. “And they are not [drugs]. So it's clear they likely can't do all they say they do.”

But is it possible that the upcoming crop of skin care “miracles” may actually be closer to delivering miraculous results? Some doctors believe there are intriguing possibilities on the horizon.

### **The antioxidant anti-aging promise**

One of the major ways skin ages is through a loss of collagen. Collagen is a naturally occurring substance that helps keep skin looking plump, lifted, and line-free. Although Jamal says we lose some collagen because of the natural aging process, an even greater amount can be lost through environmental assaults, particularly sun exposure and pollution.

These exposures, Jamal tells WebMD, increase the rate at which a natural cellular process occurs — one which releases molecules called “free radicals” into the skin. The link to aging? Free radicals attack and destroy collagen. When left unchecked, Jamal says, free radicals destroy the skin's support structure, and without that support, skin sags. Eventually, wrinkles form.

That is one reason why the up-to-the-minute ingredient generating the loudest anti-aging buzz right now is antioxidants — nutrients that attack and disable free radicals before they have a chance to destroy our collagen supply. Some may even help increase natural collagen production.

Ken Beer, MD, director of Palm Beach Esthetic Center and author of *Palm Beach Perfect Skin*, tells WebMD, that if the products are well designed, a level of antioxidants can be achieved that may have wide-ranging effects, including attacking free radicals. Other experts agree and say antioxidants disable free radicals, reducing or even reversing collagen damage. That means younger looking skin.

But is it just wishful thinking — or a promise we can count on?

Although research on topically applied antioxidant green tea showed it has strong anti-inflammatory and even anti-cancer properties, an 8-week medical study conducted at Stanford University was disappointing from a cosmetic perspective. The study failed to demonstrate anti-aging effects.

More promising, however, were studies conducted, by David McDaniel, MD, of the Eastern Virginia College of Medicine on a number of other antioxidants. Specifically, McDaniel looked at the protective capacity of several topically applied antioxidants, including vitamins C and E, kinetin, alpha-lipoic acid, and idebenone. While all showed some benefits to the skin, McDaniel found idebenone to be the clear leader of the pack.

A powerful micronutrient related to CoQ10, (another natural defender against cell damage) idebenone appeared to also provide a strong defense for skin. “Clinical studies thus far have shown that idebenone...quench[es] inflammatory reactions and... is a powerful antioxidant that destroys free radicals,” McDaniel recently told the *Dermatology Times*.

According to dermatologist Bruce Katz, MD, however, many women cannot tolerate idebenone products. "It can cause redness and irritation in some women that makes it difficult to use," says Katz, director of Juva Skin and Laser Center in New York City. He advises women with sensitive skin to check with a dermatologist before trying products containing idebenone.

There is still a lack of overwhelming evidence to show that, for humans, topical use of this or any antioxidant can actually halt the aging process of the skin. But McDaniel believes that as manufacturers increasingly apply pharmaceutical standards to testing and developing products, the necessary data may soon become more prominent.

### **The coffee berry craze**

Some of the testing may have already paid off for an ingredient derived from the little known fruit called the "coffee berry" that some now hail as the strongest antioxidant — and possibly the most powerful anti-aging ingredient — to date.

The same plant that bears the fruit of your Starbucks' buzz, may also add a kick to your complexion. "Coffee berry," says Beer, "is becoming popular, and it does contain high levels of antioxidants." He goes on to say that clinical trials are now underway that may show it is a significant advance.

Coffee berry was introduced to doctors at the 2007 American Academy of Dermatology annual meeting, and many believe it shows real promise.

"[It's] arguably the hottest thing out there now," says Joel Schlessinger, MD. Schlessinger, who is president of the American Society of Cosmetic

Dermatology and Esthetic Surgery, tells WebMD there is a current study showing coffee berry “has higher antioxidative properties than any product ever tested — including green tea and idebenone.”

While experts are hopeful that these antioxidant properties may translate into anti-aging effects on the skin, we won't know for certain until the study is published sometime in the coming year. (At publication, WebMD was unable to confirm details of the study or its precise publication date.) Meanwhile, consumers may weigh in a lot sooner.

The first coffee berry product — a skin cream called Revale — has already hit the market with more from other companies on the way. And coffee berry won't be alone on the shelf. A number of other new and unique antioxidant cocktails sit poised and ready to steal the thunder.

One is Estee Lauder's new “Future Perfect” line, boasting a “skin recharge cocktail” that offers the anti-aging protection of an antioxidant known as NDGA that occurs naturally in the body. Recent studies have shown that, when applied topically, it may act somewhat like estrogen, helping to prevent the loss of collagen in skin.

Clinique's Continuous Relief Antioxidant Moisturizer boasts eight antioxidants. At least one — Eukarion-134 — supposedly has the unique ability to recycle itself after each free-radical hit. This is significant because most other antioxidants lose their protective power after attacking and disabling a single free radical molecule. By recycling itself, this new antioxidant keeps on working, continuing to fight the damage that leads to aging, for a longer period on the surface of skin.

But are these and other antioxidant advances enough to guarantee anti-aging results?

Not all experts agree. According to Beer, “The degree to which any product works depends partly on the ability of the ingredient to get to the right place, which means it has to penetrate into the skin.” He believes that level of penetration is possible with the right combination of ingredients. And so, he says, some anti-aging effects are possible.

Narins, however, points out that without published clinical trials, it is impossible to know for certain. “With no FDA approval of these [ingredients], and no agency overseeing the claims, it's impossible to know if a product does what it says it does,” she says. “And my guess is that most don't.”

### **The tripeptide trifecta**

Bearing a slightly more scientific pedigree are ingredients known as “peptides.” The frenzy actually began several years ago when the National Institutes of Health funded studies on wound healing. These studies showed that a chain of five peptides could instruct the body to ratchet up collagen production in response to wounding. More recently, smaller studies found that when applied topically, this same peptide chain seemed to respond to aging, collagen-deficient skin as if it were wounded and so encouraged collagen production.

While the level of activity is still under debate, the next generation of this technology — known as tripeptides — is already here.

“These are designer peptides,” says Beer, who describes them as “groups of amino acids” that inhibit some of the natural enzymatic — and yes, aging — processes that break down and destroy critical components of youthful skin, including collagen. “By providing stability for these and other critical components,” Beer says, “[tripeptides] tip the scales in favor of remaining more youthful and less damaged.”

Lumene, a Scandinavian company exporting moderately priced skin care to the U.S., is counting on that. They combine tripeptides with the antioxidant properties of sea buckthorn oil, for their new Premium Beauty line — with research they claim proves it works.

The much more costly Osmotics Anti-Radical Age Defense Line offers a tripeptide formula that not only has antioxidant properties, but also claims to stimulate collagen production.

Narins continues to site a lack of published medical data. Schlessinger is even more blunt. “Cosmeceuticals can do some wonderful things for the skin,” he says, “including diminishing brown spots, improving texture, and making the skin feel smooth again. But filling in wrinkles — I don’t think so.”

Until published medical studies do surface, it may be up to consumers to decide for themselves if even the cosmetic results have merit.

### **DNA repair and younger skin**

One more class of products offering new hope in a jar takes the sci-fi approach of tinkering with DNA to turn back the clock one molecule at a time. One such product is called “Remergent.” Sold through doctor's offices, Remergent reportedly works by delivering to cells small packets of enzymes with the capability of repairing DNA. When DNA, the basic

component in all living cells, is damaged — whether by too much sun exposure, or through the chemical assaults of pollution — cells undergo changes that can result in anything from accelerated aging to disease, including cancer. The company's website points to several published clinical studies they say document their product's ability to control or even reverse DNA damage.

But while Beer is certain the technology is possible, he is less sure it is here. “None of these (studies) correlate the reversal of any age related symptoms or of any skin cancer treatment with their ingredients,” he says. “So while I believe that the technology for DNA repair holds great promise, I am awaiting evidence to convince me that it comes in a bottle.”

Jamal is even more skeptical: “In order for DNA repair to occur, the effect has to take place in the nucleus of the cell — and my question is, are the agents able to affect nuclear processes [in your skin] as well as in the dish in the lab?”

Perhaps time — and more research — may answer that question.

So in the meantime . . . what's a girl to do?

“Stay out of the sun, wear sunscreen, keep skin well moisturized,” says Jamal. And, she says, use anything that you believe makes a difference. Much like beauty, in the end, the look of youth may be in the jar of the beholder.