

Skin Defenders

There's no doubt that skin needs antioxidants. But with so many available, the question is which ones. We've got the answer. By Brooke Le Poer Trench

Like sex educators, dermatologists constantly lecture on the importance of using protection. And we're not just talking about SPF. "Topical antioxidants save cells from a significant amount of environmental damage," says dermatologist Leslie Baumann. Antioxidants work their magic by turning free radicals—molecules that form in the body when you're exposed to UV light and other environmental assaults—into benign compounds, stopping them from causing inflammation, DNA mutations, and collagen loss. That's why

adding a layer of topical antioxidants in the morning can help prevent wrinkles, spots, and maybe even skin cancer.

But with a dizzying number of antioxidants being packed into more creams and serums than ever, choosing the right one can be perplexing. "You could have an extremely potent antioxidant, but it will only be effective in a high enough concentration and in a stable formulation," says Baumann. We've gathered the latest wisdom on the top five antioxidants to help you find the best protection. It sure beats abstinence.

GREEN TEA

Green tea has bragging rights to two top features: "It absorbs into the skin really well," says Baumann, and "of all the antioxidants, it is the most studied." Unlike white and black teas, which are fermented, green tea is made from the steaming and drying of fresh leaves, better preserving its antioxidant polyphenols. Its scores are impressive: It's over 100 times more effective than vitamin C and 25 times more powerful than vitamin E at neutralizing free radicals. Studies also show that it protects against DNA damage caused by the sun. To be effective, the serum or cream needs to have 50 percent polyphenols, and you can tell when one does because the product will be brown. According to Baumann, the Topix Replenix line is the only one with a high enough concentration of green tea to benefit the skin.

VITAMIN C

This vitamin stands out for one compelling reason: "Increasing levels of vitamin C in the skin can prevent and, unlike most antioxidants, even *repair* some signs of aging," says Baumann, author of *The Skin Type Solution* (Bantam). That's because it plays a vital role in the metabolism of collagen. The problem, however, is that topical vitamin C can be unstable, meaning that when it's exposed to oxygen, sunlight, or certain

Applied to the skin, antioxidants from fruits and vegetables help protect it from sun damage.



liquids, it breaks down and becomes ineffective. The best formulas use ascorbic acid, the most stable form of C, and are often serums packaged in brown, airtight containers or single-use ampoules. Unlike more complex antioxidants, which are naturally made up of a mixture of antioxidants, vitamin C or E alone can actually produce free radicals. “They need to be in the presence of a similar antioxidant to counteract this effect,” says Baumann. That’s why you often see vitamin C with vitamin E, and sometimes also with ferulic acid. “The combination of these three more than doubles the sun protection in the skin and prevents DNA mutations from occurring,” says Sheldon R. Pinnell, professor emeritus of dermatology at Duke University School of Medicine.

Using idebenone, 72 percent of women had improvement in fine lines and wrinkles.

And, appealing on the instant-gratification front, when you slick on a vitamin C product, your skin should tingle. “That’s a very good sign that the vitamin C has a low enough PH to be effective,” says Baumann. She recommends SkinCeuticals C E Ferulic and Murad Essential-C Moisture SPF 15. If the cream turns brown or if it’s been opened for more than three months, it will no longer be effective.

IDEBENONE

Idebenone is one tough cookie. Unlike most antioxidants, which can only cancel out one free radical per molecule, idebenone is able to negate multiple free radicals or stop them from forming in the first place—which means your skin stays protected longer, says cosmetic chemist Joseph Lewis, who owns the patent for idebenone. In a company-sponsored study of PreVage MD—a 1 percent idebenone serum sold in doctors’ offices—72 percent of women with severe to moderate sun damage had improvement in fine lines and wrinkles. One caveat: Because idebenone is so strong, it can

cause skin irritation in some people. If your skin is sensitive, start out with an over-the-counter product with .5 percent idebenone (in Elizabeth Arden PreVage, Priori Bioengineered Skincare Even Tones and Smooth Lines lotions, and the True Anti-Aging skin-care line).

POMEGRANATE

It’s more than just Persephone’s fruit. Pomegranate’s extremely high polyphenol content “strengthens the cell membrane, making it less susceptible to damage and moisture loss,” says dermatologist Howard Murad, associate clinical professor of dermatology at UCLA. Translation: Skin remains hydrated throughout the day and is less likely to wrinkle prematurely in the long run. Pomegranate may

also help protect against skin cancer. The extract was shown to prevent skin tumors and to increase sunscreen’s effectiveness. Top products include Murad Vitalic Energizing Pomegranate Moisturizer SPF 15, Borba Clarifying Complexion Shield SPF 15, and Estée Lauder Nutritious, a new skin-care line based primarily on pomegranate (available in June).

COFFEEBERRY

Hailed as the most potent mixture of natural antioxidants discovered to date, CoffeeBerry—the extract of the cherries of the coffee plant—is able to neutralize a wide variety of free radicals so well because of the tough conditions the plant tolerates outdoors. As with vitamin C, CoffeeBerry can also reverse some signs of UV damage. A study of the RevaléSkin line—the first and only line of skin-care products to contain the tested extract—found it to be eight times better than a placebo at decreasing fine lines and wrinkles. Dermatologists believe CoffeeBerry may also help with pigmentation problems, such as dark and red spots and rosacea. ♦

Rating System

Like a prizefighter, every new antioxidant claims to be stronger than the previous champion. Now experts have come up with a standardized rating called EPF (Environmental Protection Factor) that tallies up protection against UV rays and free radicals, then assigns each antioxidant a score. Idebenone is on top with an EPF of 95 (out of 100), followed by vitamin E (80), kinetin (68), Coenzyme Q10 (55), vitamin C (52), and alpha lipoic acid (41). However, only one study has been completed, and only six antioxidants (not including CoffeeBerry and pomegranate) were tested. “EPF is valuable because it looks at absorption,” says Baumann. “But it is by no means conclusive in terms of which antioxidants work. You need to look at other factors, too.” Still, doctors do believe the system has potential. “And right now, it’s the only real rating system we have,” says dermatologist David McDaniel.

COMING SOON

Scientists are always looking for the next big superstar. These antioxidants have shown serious promise:

LUTEIN AND ZEAXANTHIN When ingested, these protect the eyes from UV light and the skin cells from DNA damage. “We need more research—they may work the same way when applied to skin,” says Baumann.

AÇAI This small Brazilian fruit is “a rich source of fatty acids and a tremendously powerful antioxidant,” says dermatologist Jeannette Graf. It may also have anti-inflammatory benefits. But scientists are still figuring out how to formulate higher concentrations for skin care. “The fruit is deep purple, so for now topical products can contain only a modest amount or it will stain the skin,” says Graf.

NDGA (nordihydroguaiaretic acid) Derived from a pungent desert shrub, this reduces inflammation, irritation, and sebum, and boosts protection against UV damage. It may even help prevent the loss of collagen. However, the studies have mostly been on mice, so experts say more are needed on human skin.

SOD (superoxide dimutase) “Many antioxidants, such as vitamins, can only neutralize one free radical,” says Graf. But SOD gobbles up free radicals for a much longer time. “The challenge has been finding a way to stabilize this enzyme.”