

Nutrients for Healthy Skin: Inside and Out

Vitamins, minerals, and other nutrients can give your skin the youthful glow of good health

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WebMD Feature

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Of all the news coming from the beauty community, the loudest buzz may be about the power of vitamins, minerals, and other nutrients to give skin a more radiant, healthy, and, yes, youthful glow.

The excitement is focused not only on creams and lotions you put *on* your skin but what you put into your body as well. Health experts say that vitamins and minerals in all forms play an integral role in a healthy complexion, whether the source is

food, supplements, or even a jar of cream.

"Your skin is the fingerprint of what is going on inside your body, and all skin conditions, from psoriasis to acne to aging, are the manifestations of your body's internal needs, including its nutritional needs," says Georgiana Donadio, PhD, DC, MSc, program director at the National Institute of Whole Health in Boston.

If you feed your skin from the inside and out, experts such as Donadio and others say you can't help but benefit.

So which nutrients do you need to keep your skin healthy and looking its best? According to the experts interviewed by *WebMD*, plus new information from the American Academy of Dermatology (AAD), the following vitamins, minerals, antioxidants, and other nutrients nourish your skin, whether you take them in supplement form, apply them directly to you skin, or make sure you get enough from the foods you eat.

The Vitamins That are Good for Skin Nutrition

Vitamins C, E, A, K, and B complex can all help improve skin health. Here's how:

Vitamins C and E. Among the most important new dermatologic discoveries is the power of vitamins to counter the effects of sun exposure.

In research presented at the 2002 Annual Meeting of the American Academy of Dermatology, Duke University researcher Sheldon Pinnell and colleagues demonstrated that "appreciable photoprotection can be obtained from topical vitamins C and E."

"Topical Vitamin C can prevent the consequences of prolonged sun exposure which can lead to skin cancer," says Karen E. Burke, MD, in a news release. "Supplementation with natural Vitamin E in 400 mg per day has been noted to reduce photodamage, wrinkles and improve skin texture."

This research has been backed up by a more recent study. *The Journal of Investigative Dermatology* reported in February 2005 that people who take vitamins C and E in the long term reduced their sunburns from exposure to UVB radiation. Further, researchers saw a reduction of factors linked to DNA damage within skin cells, leading them to conclude that antioxidant vitamins help protect against DNA damage.

Vitamin C and E help by reducing the damage caused by free radicals, a harmful byproduct of sunlight, smoke, and pollution. Free radicals gobble up collagen and elastin, the fibers that support skin structure, causing wrinkles and other signs of aging. When these two vitamins are combined in a lotion, they can be highly protective against sun damage, says the American Academy of Dermatology.

This doesn't mean you can gobble vitamins or lather on lotion, then bake safely in the sun. The link between tanning and skin cancer is indisputable and dangerous. (Always wear a sunscreen with an SPF of at least 25 and limit your sun exposure between 10 a.m. and 3 p.m.) But you may be able to help your skin stay healthier and supple by making sure you get enough of these antioxidant vitamins.

To make sure your diet includes plenty of vitamin C, eat citrus fruits and vegetables rich in vitamin C such as bell peppers, broccoli, cauliflower, and leafy greens. These foods can replace the loss of the vitamin through the skin. You can also take vitamin C supplements, up to 500 to 1,000 milligrams of per day, according to the American Academy of Dermatology.

You can also try a topical vitamin C cream to encourage collagen production, just as your body does naturally when you are young. The trick here is to use a

formulation containing the L-ascorbic acid form of vitamin C, the only one that can penetrate skin layers and do the job.

You can find vitamin E in vegetable oils, nuts, seeds, olives, spinach, and asparagus. But it's difficult to get a lot from food, so many people take a supplement. (Be aware, though, that some recent research warns that large doses of vitamin E can be harmful. Stay with 400 international units per day or less to be on the safe side.) Used in a cream, lotion, or serum form, vitamin E can soothe dry, rough skin, according to the American Academy of Dermatology.

More Vitamins for Healthy Skin

Vitamin A. If your vitamin A levels are up to snuff from the foods you eat, adding more probably won't do much more for your skin. That said, if those levels drop even a little below normal, you're likely to see some skin-related symptoms, including a dry, flaky complexion. That's because vitamin A is necessary for the maintenance and repair of skin tissue. Without it, you'll notice the difference. Fruits and vegetables are loaded with vitamin A.

Topical vitamin A is the form that makes a real difference in your skin. Medical studies show a reduction in lines and wrinkles, good acne control, and some psoriasis relief, all from using creams containing this nutrient. For example, in research presented at the Annual Meeting of the American Academy of Dermatology in 2003, researchers from France showed that topically applied retinol plus vitamin C demonstrated a "reversal of skin alterations induced by chronologic aging and photoaging."

In another study published in the *British Journal of Dermatology*, doctors found that foods high in beta-carotene—a form of vitamin A—appeared to reduce the risk of psoriasis.

The prescription treatment for acne called Retin-A is derived from vitamin A. The less potent, over-the-counter formulations are sold as retinols and used as anti-aging treatments.

Vitamin B Complex. When it comes to skin, the single most important B vitamin is biotin, a nutrient that forms the basis of skin, nail, and hair cells. Without adequate amounts, you may end up with dermatitis (an itchy, scaly skin reaction) or sometimes even hair loss. Even a mild deficiency causes symptoms.

Most people get enough biotin without even trying. It's found in many foods including bananas, eggs, oatmeal, and rice, plus your body also makes some biotin on its own.

But recently, greater attention is being paid to topical preparations containing B vitamins. These creams can help give skin an almost instant healthy glow while

hydrating cells and increasing overall tone. Niacin, a specific B vitamin, helps skin retain moisture, so creams containing this nutrient can help your complexion look plumper and younger in as little as six days. Niacin also has anti-inflammatory properties to soothe dry, irritated skin. In higher concentrations it can also work as a lightening agent to even out blotchy skin tone.

In one study presented at the Annual Meeting of the American Academy of Dermatology in 2003, a topical form of vitamin B was shown to dramatically improve aging in human skin.

Vitamin K. As the nutrient responsible for helping blood clot, Vitamin K won't do much for your skin from the inside. But studies presented to the American Academy of Dermatology in 2003 showed that topical vitamin K works well to reduce circles under the eye as well as bruises. In research published in the *Journal of the American Academy of Dermatology* in 2002, doctors from the University of Miami School of Medicine found that skin treatments with vitamin K cream after laser surgery significantly reduced bruising. When combined with vitamin A in a cream, vitamin K can be even more effective for those dark circles. In a study published in the *Journal of Cosmetic Dermatology*, doctors from the Nippon Medical School in Tokyo found that the topical application of a gel containing a derivative of vitamin K, as well as vitamins A, C, and E, was effective in reducing dark under-eye circles while also decreasing wrinkles.

Selenium. A number of scientists believe this mineral plays a key role in skin cancer prevention. Taken in supplement form or used in a cream, this mineral helps protect skin from sun damage. If you do spend any time in the sun, selenium could help reduce your chance of burning.

In studies in *The Journal of the American Medical Association* in 1996, researchers showed that skin cancer patients who ingested 200 micrograms of selenium per day had:

- fewer malignancies
- reduced risk of death from skin cancer
- decrease in overall mortality

In still more research published in the French journal *Photodermatol Photoimmunol Photomed* in 1991, researchers found that oral selenium as well as copper helped reduce the formation of sunburn cells in human skin. The best dietary sources of selenium include whole-grain cereals, seafood, garlic, and eggs.

Copper. Still another important mineral is copper. Together with vitamin C and the mineral zinc, copper helps to develop elastin, the fibers that support skin structure from underneath.

A deficiency of this mineral is rare, and doctors caution that supplements can be

dangerous. So it is generally not advised to consume extra copper. But topical applications of copper-rich creams aren't associated with the same kind of problems. What's more, they have been found to firm the skin and help restore some elasticity, according to four studies presented at the American Academy of Dermatology Annual Meeting in 2002.

The research, conducted at the University of Pennsylvania, found that when compared with a popular skincare treatment and a placebo, a cream containing copper peptides demonstrated rapid, visual overall improvements in skin roughness, clarity, fine lines, wrinkling, and overall photodamage. In similar studies, this same team of researchers found that copper peptides noticeably improved skin elasticity and thickness.

Zinc. The third skin-friendly mineral is zinc, important if you have acne. In fact, sometimes acne itself is a symptom of a zinc deficiency. Taken internally or used topically, zinc works to clear skin by taming oil production and may be effective in controlling the formation of acne lesions or help those already on your skin to clear sooner. Food sources of zinc include oysters, lean meat, and poultry.

Beyond Vitamins and Minerals: The New Skin Nutrients

Some of the more exciting new skin research looks beyond vitamins and minerals to other nutrients that when taken internally or applied topically can have remarkable effects on your skin.

Alpha-Lipoic Acid. A powerful antioxidant, hundreds of times more potent than either vitamin C or E, alpha-lipoic acid may turn out to be a super boost for aging skin. What makes it so special, say skin experts, is its ability to penetrate both oil and water, affecting skin cells from both the inside and the outside of the body. Most other antioxidants can do one but not both.

DMAE. Another powerful antioxidant, this nutrient has one of the strongest appetites for free radicals. It works mostly by deactivating their power to harm skin cells. It also helps stabilize the membrane around the outside of each cell so that assaults from sun damage and cigarette smoke are reduced. As with alpha-lipoic acid, DMAE is available in supplements and in topical creams.

Hyaluronic Acid. Made by the body, this nutrient's main job is to lubricate joints so that knees, elbows, fingers, and toes all move smoothly and easily. Another plus is its ability to hold water, up to 1,000 times its weight, which means more moisture in each skin cell.

Top skincare lines now include creams with hyaluronic acid. It is equally powerful taken in supplement form, though more research is needed to prove effectiveness. The nutrient isn't readily available in food.

Essential Fatty Acids (EFAs). If your skin is dry, prone to inflammation, and frequently dotted with white heads and black heads, you may be lacking essential fatty acids, nutrients that are crucial to the production of skin's natural oil barrier. Without an adequate supply of EFAs, the skin produces a more irritating form of sebum, or oil, which can result in problems.

The solution may be to balance two of the key EFAs, omega-3 and omega-6. While most folks get plenty of omega-6s (in baked goods, cooking oils, poultry, grains, and many other foods), omega-3s are often lacking. They're found mostly in cold-water fish, including salmon, sardines, and mackerel, flaxseed, and flax and safflower oils. Taking supplements, such as fish oil capsules or evening primrose oil, may also help keep your skin smoother and younger-looking.

Skin Nutrition: The Bottom Line

Most people can get all the nutrients their skin needs from a multivitamin and a healthy diet, says dermatologist Rhoda Narins, MD, of NYU's School of Medicine.

"You should get your basics in a multivitamin, and if you want to reap the benefits of all these other nutrients, get them in food, or use topical preparations," she says.

To some extent, Georgiana Donadio of the National Institute of Whole Health agrees: "It's not a matter of running out and spending a lot of money on vitamins. The idea is to use them in a very intelligent way that's healthful to you. But don't ever think they are the whole answer to dealing with a health problem, particularly aging skin."

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SOURCES: Georgiana Donadio, PhD, DC, MSc, founder and director, National Institute of Whole Health, Boston. Mary Sullivan, RN, executive vice president and co-founder, Olympian Labs, Scottsdale, Ariz. Rhoda Narins, MD, professor of dermatology, NYU School of Medicine, New York; president, American Society of Dermatologic Surgeons. Placzek, M. *Journal of Investigative Dermatology*, February 2005; vol 124: pp 304-307. Clark, L. *The Journal of the American Medical Association*, 1996, vol 276: pp 1957-1963. Mitsuishi, T. *Journal of Cosmetic Dermatology*, April 2004; vol 3. Sha, N.S. *Journal of the American Academy of Dermatology*, August 2002; vol 47: pp 241-243. Grossman, R. *American Journal of Clinical Dermatology* 2005; vol 6: pp 39-47. Qing, W. *Journal of Clinical Epidemiology*, August 1994; vol 47: pp 829-836. Keller, K. *Journal of the American Academy of Dermatology*, October 1998. Burke, K. *Nutrition and Cancer*, 1992; vol 17: pp 123-37. Perricone, N. *Archives of Gerontology and Geriatrics*, July-August 1999; vol 29. Darr, D. *Acta Derm Venereol*, July 1996; vol 76: pp 264-268. Eberlein-Konig, B. *Journal of the American Academy of Dermatology*, January 1998; vol 38: pp 45-48. la Ruche, G. *Photodermatol Photoimmunol Photomed*, December 1991; vol 8: pp 232-235. Naldi, L. *British Journal of Dermatology*, January 1996. American Academy of Dermatology 2003 Annual Meeting. American Academy of Dermatology.

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