Gorgeous, Glowing, Healthy Skin—
Starts from Within

Skin is the outermost tissue of our body, and many of us are keenly aware of its appearance and strive to keep it looking vital and youthful. The skin also safeguards our health by preventing harmful microorganisms and chemicals from entering, minimising the loss of life-sustaining bodily fluids, helping to regulate body temperature, and allowing us to touch and sense our environment.

Daily habits that can help keep this organ of our body functioning well and looking healthy are fairly straightforward: keep the skin clean, eat a variety of fresh and healthy foods, stay hydrated, get adequate sleep and wear sunscreen. Physical activity is important as well to increase the flow of oxygen and nutrient-carrying blood to skin cells. Managing stress can also be a factor, as experts increasingly recognise that emotions too can affect the appearance of your skin.

The basic foundation of skin health, however, begins with nourishment from within. That means consuming a well-rounded diet rich in fruits & vegetables and high quality protein to provide the building blocks for maintaining skin integrity and for protection from oxidative stress. This issue of News You Can Use surveys new science pertaining to some of the nutrients most relevant to skin health, and highlights new research suggesting that others may afford photo-protection or boost skin immunity.

*These products are not intended to diagnose, treat, cure or prevent any disease.
Dietary Basics for Maintaining Healthy Skin…

Both delicate and resilient, the skin is constantly being renewed and has a remarkable ability to repair itself after injury. To accomplish the processes of renewal and repair requires a variety of nutrients.

Dietary protein, for example, provides the amino acid building blocks needed to assemble collagen and elastin, structural proteins in the skin’s dermis or middle layer, that help keep skin smooth and firm. The structural protein keratin is also found in the outer layer or epidermis. Vitamin C as well as copper and zinc are catalysts in the manufacture of these proteins.

Dietary essential fatty acids, both omega-3 and omega-6, are components of cell membranes and help produce the skin’s natural oil barrier, critical in keeping skin hydrated, plumper and younger looking. A network of fat cells and collagen also compose the sub-cutis, the deep layer below the dermis that helps conserve the body’s heat and acts as a protective shock absorber.

The skin continually sheds dead cells and replaces them with new ones. This cellular turnover requires a number of nutrients such as vitamin A for the growth and maintenance of epithelial cells of the epidermis, and folic acid for cellular DNA and RNA production.

...and Protecting It

Free radicals can harm skin cells and cause signs of aging. Along with enzymes that deactivate free radicals, dietary antioxidants such as vitamins C and E work synergistically to curb the potential damage caused by these unstable molecules.

The most important cause of cumulative, oxidative damage is ultraviolet (UV) radiation from sunlight exposure. Over-exposure to sunlight causes reddening and inflammation, and reduces the number of dermal blood vessels that supply nutrients to the skin. Sunlight also damages proteins that are important for maintaining skin tone. Exposure to air pollutants in addition to UV radiation also generates free radicals and damages skin cells. These effects are collectively known as “photo-aging”, and a variety of nutrients can help combat this process. (Keep in mind that photo-protective nutrients are meant to enhance, not replace, the use of sunscreen.)

Dietary carotenoids have been shown to accumulate in the skin and offer a measurable photo-protective benefit that’s directly linked to their concentration in skin. Findings suggest that the skin is relatively enriched in beta-carotene and lycopene, and lutein and zeaxanthin are also present. Lutein and zeaxanthin filter UV light in the eye’s macula, and scientists believe that these carotenoids play a similar protective role in the skin.

Interestingly, the results of several studies suggest that combinations of high dose vitamins C and E or vitamin E and carotenoids confer greater protection against UV-induced sunburn and inflammation than do individual nutrients.

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FACTOID:

Several studies suggest that olive oil may enhance the bioavailability of carotenoids. Lutein is an oil-soluble nutrient, and a recent study tested different kinds of oil (e.g. corn, sunflower, soya, rice bran) to see which increased lutein absorption the most. Olive oil was the best. And for a bonus, olive oil is heart-healthy too! So try drizzling olive oil on your next spinach and tomato salad. Bon appétit!
In addition to blocking UV light, carotenoids have also been reported to contribute to healthy-looking skin tone. Results of a newly published study suggest that realising the beneficial effect of eating more fruits and vegetables (sources of carotenoids) on skin tone appearance helps motivate people to improve their intake of healthful produce.

Other botanical-derived nutrients, too, have shown photo-protective capacity. Green tea is a prime example. In a recent study, fair-skinned participants were given green tea supplements along with 50 mg of vitamin C for 12 weeks. Skin was exposed to UV radiation before and after supplementation.

Results showed that green tea catechin metabolites were incorporated into skin, and that the level of sunburn (erythema) was reduced after the 12-week period. Markers of inflammation, which increase with UV exposure, were also lower after supplementation. The study’s authors point out that a cup of green tea contains about 300 mg of catechins, so the level of catechins tested (540 mg) are readily achievable.

In addition to green tea catechins, other antioxidant compounds such as various flavonoids hold skin-protective promise. Flavonoids are part of a broader family of compounds known as polyphenols. Apigenin, a flavonoid occurring in many herbs, fruits and vegetables, together with other polyphenols found in grapes and red wine as well as curcumin from the spice turmeric and proanthocyanidins from grape seed have been shown to possess the ability to protect the skin from harmful UV effects by their antioxidant, free radical scavenging and anti-inflammatory actions.
Topical Nutrients, Botanicals are Important Too!

The beauty of skin is that it can be nourished and protected both from the inside and outside. Topical application of certain nutrients can complement dietary intake, leading to a stronger, healthier protective barrier for the body.

UV light exposure, for example, can deplete antioxidant levels in the skin, including vitamins C and E. So topically increasing antioxidant defences in skin cells can be important to limit photo-damage.

New skin research has also looked beyond traditional nutrients to botanicals. Some botanical antioxidants can have profound effects on cellular signalling pathways that are involved in skin damage. A review of studies with green tea, for example concluded that both oral consumption and topical application of green tea could help protect against inflammation and photo-damage. Other studies suggest that components in Echinacea may help protect skin collagen from free-radical damage, as well as support skin hydration.

Vitamin A is needed to keep skin cells healthy and along with C and E, can help regenerate the skin when injured.
Emerging Research: **Skin-Healthy Effects of Omega-3s and Vitamin D?**

We mostly associate omega-3s with heart health, but these familiar fatty acids may also influence skin health. Vitamin D is attracting interest for its possible anti-aging effects too.

**Latest Omega-3 Findings**

Exposure to UV radiation in sunlight suppresses the skin’s immune system, specifically cell-mediated immunity.

A preliminary, but promising study suggests that **omega-3 fatty acids** may have a role in boosting skin immunity after UV exposure. After 3 months of taking omega-3 fatty acids or placebo supplements, study participants were exposed to the equivalent of 8, 15 or 30 minutes of summer midday sun using a special light machine.

Immune suppression was 50% lower in people receiving omega-3s compared to those in the placebo group for the 8 and 15 minutes sun exposure. Research has shown that sunscreen is often applied inadequately and used only during vacation periods, so even modest protective effects may be helpful. The study’s authors emphasise that the beneficial changes, though small, suggest that a continuous low level of protection from the omega-3s could provide meaningful skin protection over a lifetime.

**FACTOID:**
The omega-3s aren’t the only fatty acids to influence skin health and appearance. In the National Health and Nutrition Examination Survey, middle aged women consuming higher levels of the omega-6 linoleic acid were less likely to have age-related dry, thin and fragile skin.

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**Vitamin D and Skin Aging?**

Our skin is the only tissue in the body that has both the capacity to make vitamin D, and is also a target of vitamin D activity. This vitamin is manufactured from cholesterol in the skin when it’s exposed to sunlight. At the same time, laboratory studies suggest that vitamin D compounds also protect the skin from the sun’s UV radiation.

Researchers are interested in learning whether vitamin D helps regulate aging in a variety of tissues, including skin. In experiments, mice bred to have extremely high vitamin D activity show signs of premature aging. Premature aging also occurs in these animals when that activity is reversed and vitamin D levels are low.

Will maintaining adequate blood levels of vitamin D support healthy skin as we age? The answer to this intriguing question awaits further evaluation. In the meantime though, taking supplemental vitamin D to achieve recommended intakes is a good idea. It can be difficult to get enough from foods alone. And many people get too little sun exposure to produce enough vitamin D in their skin because of where they live, and the widespread use of sunscreens.

**GNLD Products containing vitamin D:** Vitamin A & D, Chelated Cal-Mag, Vita Squares, Liqui-Vite, Formula IV, Formula IV Plus, Multi, Daily Vitality Pack, GR² Control Meal Replacement Protein Shake, Nutrishake and Pro Vitality+.

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**REFERENCES**