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Skin Health ~ Inside-Out and Outside-In

Sun damage is cumulative and often remains hidden to the naked eye for decades. As the years pass and sun glow routines continue unmitigated and exacerbated by the daily ravages of air pollutants and the effects of temperature extremes, the evidence of accelerated aging begins staring back at you in the mirror - sagging skin, deeper wrinkles, and pigmentation mottling.

What's more is that skin, being the largest organ of the body, requires daily care and protection, and not just seasonal attention. But the condition of your skin is also greatly affected by a variety of intrinsic factors as well. It's not just how you live that influences how you look, but what you eat as well. And it's this hot, new quest for inner understanding which has led to the explosion of interest in the category of cosmeceuticals.

Cosmeceuticals are products or formulations that contain beneficial natural health ingredients in either ingestible or topical formats to support smart aging, external beauty, and overall health. Familiar substances include vitamins, minerals, botanicals, herbs and various nutrients of which a large percentage are considered potent antioxidants. And it is the antioxidants which help offset the excess free radicals within the body that create cell damage and impairment.

Collagen and elastin are both important components of the skin's tissue. These proteins, found in the dermal layers of the skin, help to hold the skin together, and maintain its youthful appearance, elasticity and tone. Reactive free radicals negatively impact on the skin, wearing down its collagen and elastin fibers, hence producing the visual signs of aging. Antioxidants can also help protect against sun damage while reducing inflammation that causes depletion of collagen.

Mirror, mirror on the wall, which is the most effective cosmeceutical of all?

Some potent antioxidants include green tea, CoQ10, alpha lipoic acid, resveratrol, vitamin A, C, E and selenium and carotenoids like lycopene, beta-carotene and lutein. And although there is no one single nutrient that does it all, a combination of ingredients and products when paired together provide powerful benefits to keeping you healthy both inside and out.

Carotenoids such as beta-carotene, lutein, and lycopene have been found to protect against UV-associated skin damage individually and as components of diet. One way they appear to do this is by quenching (cancelling out) the effects of free radicals, highly damaging molecules released by UV exposure. Beta-carotene specifically reduces melanoma risk, and works



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synergistically with vitamins C, A, and E for a “multiplier effect.” Along with fellow carotenoids lutein and lycopene, beta-carotene also significantly reduces the redness (“erythema”) caused by sunshine overexposure.

Lutein protects skin cells against both oxidative damage and genetic damage. UV-exposed skin protected with lutein actually shows less cell loss, less damage to the membranes of cells, and less damage to elastic tissues. Lutein also combats suppression of the immune system.

Beta-carotene is found in the highest concentrations in carrots, sweet potato, yams, pumpkin, spinach, kale, collard greens, and nearly any other yellow or orange vegetable. Lutein levels are exceptionally high in spinach and kale, and relatively high in peas, Brussels sprouts, zucchini, pistachios, broccoli, and corn. Lycopene is the red pigment found in tomatoes, and is actually most bio-available from tomato paste, tomato sauce, and ketchup (sugar free, please). There’s also a high lycopene content in watermelon, pink guava, and papaya.

Next on the list are flavonoids and polyphenols, which have been found to protect against cancer formation induced by UV radiation. These include epigallocatechin gallate (EGCG) from green tea, theaflavins and thearubins from black tea, caffeine (yes, that’s caffeine), and flavonoids from citrus peel, proanthocyanidins, and other polyphenols from grape seeds, red wine, and cocoa.

EGCG reduces the frequency of gene mutation and aging in human skin fibroblasts (which make collagen in skin) exposed to both UV-A and UV-B over long periods of time. Black tea and green tea polyphenols both protect against UV-B tumors, with black tea polyphenols offering the best protection. One study showed that higher levels of tea consumption were associated with lower levels of both basal and squamous cell cancers.

Citrus peel flavonoids have been found to protect against squamous cell cancer, and when they’re combined with black tea, the protective effect is even greater. Polyphenols from cocoa significantly protected against UV induced erythema, although the effect was found to be less protective than that of lycopene.

Resveratrol, proanthocyanidins, and polyphenols (all found in red grapes) each inhibit skin cancer induced by UV. And, like citrus peel flavonoids and black tea, they work even better when they’re used together. These nutrients have all been found to work by helping conserve internally produced antioxidant enzymes and glutathione (a major antioxidant), suppress the oxidative effects of internally produced peroxide and nitric oxide, and inhibit UV-induced cell death.



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Rounding out our list are fish oil and olive oil. Fish oil (which is the best source of omega-3 fatty acids) significantly reduces UV-induced suppression of the immune system and cancer induction. By contrast, omega-6 fatty acids (the highest amounts of which are found in vegetable oils) are associated with UV-induced DNA damage and tumor growth. Population studies show a trend toward lower risk of squamous cell cancers and melanoma with higher ratios of omega-3/omega-6 fatty acids.

Olive oil, which is high in omega-9 and mono-unsaturated fatty acids, helps slow signs of skin aging and protects against skin cancers. It also contains the antioxidants oleuropein and hydroxytyrosol, which protect against UV-induced pro-cancerous activity.

Applying ingredients topically can deliver benefits directly to the skin, ensuring higher concentrations, while internal supplements offer protection to the structures of the skin and the body as a whole. Many aging and other beauty concerns affect the deeper layers of skin that topical creams are unable to reach. Ingestible supplements work inside-out, providing substances to help increase cell renewal and increase circulation, thus, enabling the body to build collagen and elastin.

And that's not all. There are other powerful health benefits. For instance, when green tea rich in polyphenols is used in ingestible form, it helps protect against cancer, reduce cardiovascular disease and stroke, and appears to aid in the prevention of osteoporosis.

Conversely, creams and other topicals help deal with the outside-in. Research has shown that green tea polyphenols when used topically can help stimulate the proliferation of skin cells. They can help reverse the outward signs of aging and help various skin disorders, including rosacea and psoriasis. Furthermore, green tea polyphenols help protect against sun damage and sunburn as they reduce inflammation caused by UV radiation and restore glutathione (GSH) levels, the body's main endogenous antioxidant.

The vast amount of current literature and science supports the use of antioxidants and various nutrients in both wellness and beauty. Together, a selection of research-backed cosmeceuticals can help prevent premature aging of the skin, reduce fine lines and wrinkles, and offer a valid solution for maintaining our youth both visually and physically.

~May you and your skin be well~