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A new look at age-old antioxidant to battle photoaging

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The phytochemical, curcumin - which gives the spice, tumeric, its yellow color - is becoming increasingly popular as an anti-aging agent. Some experts think its potent anti-inflammatory power may earn it a place in today's aesthetic arsenal - particularly in the treatment of photodamaged skin.



Male patient (top, left) with residual solar lentigo and wrinkles following 6 months of curcumin gel with sunscreen and (top, right) showing marked improvement after an additional 6 months of the gel regimen. Female patient before (bottom, left) with photodamaged upper chest skin despite sunscreen usage and (bottom, right) six months following application of curcumin gel under sunscreen. (Photo credit: Madalene Heng, M.D.)

"It's the anti-inflammatory properties of curcumin that make it such a valuable tool," Madalene Heng, M.D., Professor of Medicine/Dermatology at the University of California, Los Angeles, School of Medicine, tells *Cosmetic Surgery Times*. "This potent botanical compound can be effectively used to treat any condition where inflammation and injury are involved. It's also effective in scar prevention in superficial burns and surgical wounds," she adds.

NICE SPICE

According to Dr. Heng, curcumin can repair sun-damaged skin, effectively treating fine lines and rhytids, lentigo malignas, dyspigmentations, actinic keratoses, psoriasis and scars - even fresh keloidal scars. She explains that curcumin short circuits the body's response to assault.

"Every injury stimulus that damages the skin goes through the injury cycle, and by quenching this cycle at the outset, we can reverse or minimize the damage," she says.

Here's how it works: Injuries result in inflammation (pain, erythema and edema), and, five minutes post-injury, phosphorylase kinase is secreted. Curcumin inhibits this secretion, preventing the subsequent inflammatory cascade.

TARGET TREATMENT

In Dr. Heng's regimen, curcumin is applied topically in gel form, twice a day for days, weeks or months, depending on the condition being treated. While keloids are notorious for coming back with a vengeance after surgical

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excision, Dr. Heng says that such lesions may not return if curcumin is applied to the site from the time of excision for several weeks.

"Curcumin should not be used for skin cancers, which should be treated surgically," she advises. "Even though curcumin may kill a few cancer cells by apoptosis, not all cancer cells are susceptible to it."

TOPICAL OR ORAL?

Leslie Baumann, M.D., Director of the University of Miami Cosmetic Medicine and Research Institute, Miami Beach, Fla., observes, however, that there are some downsides to the wonders of curcumin.

"Curcumin is proven to be a useful weapon in the dermatologic armamentarium, as it stops the inflammatory cycle and can visibly tighten the skin," Dr. Baumann acknowledges. "However, patients may have an issue with the temporary yellow coloring it leaves behind, staining clothes and bed sheets, as well as its strong odor that may be unpleasant to some."

She notes that other antioxidants, such as green tea and ginger, are more popular because they don't have these cosmetic and olfactory issues. Dr. Baumann is a strong advocate of ingesting these compounds - including adding curry to the diet, for example - as a more favorable anti-aging approach. Oregano, tomatoes, green tea, vitamin C, ginger and ginseng are also effective anti-inflammatories; however, she relates that curry has the strongest and most effective anti-aging potential.

Dr. Heng notes that the topical gel best harnesses curcumin's anti-inflammatory powers. "Only the topical form...has the anti-phosphorylase kinase activity. Oral curcumin is not absorbed into the blood stream. However, metabolites of curcumin are absorbed - curcumin sulfate, and curcumin glucuronide. These have the anti-leukotriene, anti-prostaglandin, and anti-histaminic activity, but not the anti-phosphorylase kinase activity. This is why oral curcumin does not benefit psoriasis."

Whether applied or eaten, when it comes to antioxidants, Dr. Baumann thinks that more is better. "I'm a strong believer in being exposed to as many different antioxidants as possible," she explains, "because they can effectively neutralize free radicals which are at the root of speeding up the aging process - whether due to UV exposure, pollution or smoking. A network of different antioxidants is best as they work best together, whether applied topically or ingested through vitamins, food or water. The more we expose ourselves to them, the better off we are," Dr. Baumann says.

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