

# Carbon dioxide laser resurfacing may reduce wrinkles over long term

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Carbon dioxide laser resurfacing appears to be an effective long-term treatment for facial wrinkles, according to a report in the July/August issue of *Archives of Facial Plastic Surgery*.

The carbon dioxide laser vaporizes water molecules inside and outside of cells, causing thermal damage to the surrounding tissue, the authors write as background information in the article. In response to this insult, the skin produces more of the protein collagen, which fills in wrinkles. "In addition to structural changes, the healing process frequently leads to pigmentary [coloring] changes," the authors write. "These changes in skin pigmentation may be desirable, such as when patients wish to remove solar evidence of aging; however, changes in pigmentation after treatment can often be a troubling adverse effect."

P. Daniel Ward, M.D., M.S., and Shan R. Baker, M.D., of the University of Michigan, Ann Arbor, assessed 47 patients (42 women and five men, average age 52) who underwent carbon dioxide laser resurfacing on their entire face between 1996 and 2004.

Twenty-one patients (45 percent) had no complications following the procedure; of those who did, 14 (30 percent) had milia (small, white cysts) or acne; eight (17 percent) had hyperpigmentation (darkening of the skin); six (13 percent) had hypopigmentation (lightening of the skin); one (2 percent) developed an infection; and one (2 percent) developed sagging of the eyelids.

After an average of 2.3 years of follow-up, most of these complications had resolved. Patients' scores on a scale measuring facial wrinkles improved 45 percent, and were consistent over all areas of the face. "With the exception of one case of hyperpigmentation, which resolved within two years of treatment, hypopigmentation was the only long-term adverse effect," the authors write. "This complication was present in six patients (13 percent). The patients who developed hypopigmentation were more likely to have a greater response to treatment."

"The efficacy of treating facial rhytids [wrinkles] with the carbon dioxide laser is well established, and the short- and long-term utility of the carbon dioxide laser in treating solar facial aging has previously been documented," they conclude. "Our results verify those of previous studies that found that carbon dioxide laser resurfacing leads to long-term improvement in facial rhytidosis."

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