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**In vivo microscopic approaches for facial melanocytic lesions after quality-switched ruby laser therapy: time-sequential imaging of melanin and melanocytes of solar lentigo in Asian skin.**

*Yamashita T, Negishi K, Hariya T, Yanai M, Iikura T, Wakamatsu S.; Dermatol Surg. 2010 Jul;36(7):1138-47. doi: 10.1111/j.1524-4725.2010.01598.x.*

#### ABSTRACT

**BACKGROUND:** The quality-switched ruby laser (QSRL) has been widely used for the treatment of pigmented lesions, but clinical evaluations in most studies have been conducted on macroscopic skin color observation comparing the laser-treated skin with its nontreated surrounding area. A few investigations examined skin changes after laser therapy at a cellular level, but almost none did so noninvasively. **OBJECTIVE:** To elucidate the dynamic changes after QSRL irradiation of facial solar lentigo using noninvasive optical techniques.

**MATERIALS AND METHODS:** Time-sequential imaging of Japanese female patients with a clinical diagnosis of solar lentigo was performed using ultraviolet photography, high-magnification videomicroscopy, and reflectance-mode confocal microscopy to examine pigmentary change after QSRL irradiation. **RESULTS:** The present study showed that remaining melanocytes were visible in the solar lentigo of all subjects when crusts peeled off, despite hardly observable skin pigmentation to the naked eye. Moreover, noninvasive confocal imaging revealed that pigmented melanocytes varied in each solar lentigo after QSRL treatment, as indicated by melanin reflection level.

**CONCLUSIONS:** Optical techniques facilitate the evaluation of the in vivo dynamics of epidermal-melanocytic changes in solar lentigo after QSRL therapy and may be useful for monitoring outcomes after laser irradiation.