Dose-dependency of low-energy HeNe laser effect in regeneration of skeletal muscle in mice.

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We evaluated the effect on mice skeletal muscle regeneration of different doses (2.6, 8.4, and 25 J/cm2) of HeNe laser (lambda 632.8 nm; power, 2.6 mW; spot size, 0.007 cm2) applied directly to intact skin of injured muscle. Muscle injury was induced in both right and left Tibialis anterior (TA) muscles by ACL myotoxin (5 mg/kg). Right TA muscles were irradiated daily for 5 days while contralateral muscles received a sham treatment. Only the 2.6 J/cm2 dose resulted in changes such as increased mitochondrial density and muscle fibre in the TA muscles as compared to sham groups (3280 +/- 704 microns 2 versus 2110 +/- 657 microns 2, p = 0.02). We concluded that the HeNe effect on mouse muscle regeneration is dose-specific: only 2.6 J/cm2 increased muscle fibre area and mitochondrial density.

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