

# **Bone Healing Effects of Diode Laser (808 nm) on a Rat Tibial Fracture Model**

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**Abstract.** *Low level laser therapies (LLLT) have analgesic, vasodilatory and anti-inflammatory effects. The present study investigated the effects of LLLT with a diode laser (808 nm) device on the healing of the rat tibial fracture. Forty eight, 8-week-old, male Sprague-Dawley rats were used for this study.*

*After creating the tibial fracture model, the animals were randomly divided into laser and control groups. The animals were euthanized for histopathological and radiological evaluation. The biomechanical strength of the fractures was evaluated using a bending test. The histopathological and radiological evaluations suggested that the laser group developed new bone formations much earlier than those of the control group. The maximum tolerance force of the laser group was significantly higher than that of the control group ( $p < 0.05$ ).*

*These findings suggest positive effects of LLLT in accelerating the bone healing process, especially in the early stage of bone formation.*