

1. J Orthop Sports Phys Ther. 1988;9(10):333-8.

Laser biostimulation of healing wounds: specific effects and mechanisms of action.

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Abstract

The purpose of this article was to synthesize the scientific knowledge relevant to laser biostimulation of healing wounds. The literature reviewed suggests that biostimulation with lasers: 1) accelerates the inflammatory phase of wound healing by altering the levels of various prostaglandins, 2) increases ATP synthesis by enhancing electron transfer in the inner membrane of mitochondria, 3) quickens protein (collagen) synthesis by quickening DNA and RNA synthesis, 4) augments fibroplasia by a mechanism that is still being explored, and 5) enhances the ability of immune cells to combat invading pathogens. Although these findings were made in vitro and in vivo in various animal models, their clinical implications are quite clear. Laser biostimulation is potentially a useful tool in the treatment of wounds, particularly those cutaneous and subcutaneous wounds that are either complicated by infection or inherently require a prolonged period of time to heal. The precise dosage and frequency of treatment required to promote healing even in animal models remain elusive, as is experimental determination of the depth of penetration of lasers. J Ortho Sports Phys Ther 1988;9(10):333-338.

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