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## Laser Irradiation: A Complementary Treatment for Wounds?

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Since the invention of the laser, its application in the health sector has been studied and in an attempt to discover effective alternative treatments, Low Level Laser Therapy (LLLT), commonly known as biostimulation or photo-biostimulation, has emerged. This therapy has been successfully used both in in vitro and in vivo studies in wound healing. Although this therapy is in use worldwide, the full mechanisms of action are not fully understood. Various cell culture models, such as wounded, diabetic wounded and hypoxic, have been exposed to visible and infra-red laser light and the effect on cell migration, cell survival, proliferation, cytotoxicity, mitochondrial responses, nitric oxide, secondary messengers, DNA damage and pro-inflammatory cytokines have been studied. Laser irradiation at the correct wavelength and fluence has shown to have a positive effect on stressed cells in vitro. There is an increase in migration, survival and proliferation, mitochondrial activity, nitric oxide and secondary messengers. A decrease in cytotoxicity, DNA damage and pro-inflammatory cytokines is also seen. LLLT offers an alternative wound healing therapy. At a biochemical level there is a positive effect on cells, with stressed cells being pushed into cell survival pathways.

**Level (Hons, MSc, &nbsp; PhD, other)?**

Other

**Consider for a student &nbsp; award (Yes / No)?**

No

**Would you like to <br> submit a short paper <br> for the Conference <br> Proceedings (Yes / No)?**

Yes

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