

Clinically Proven Benefits

- + Improved pain relief
- + Earlier discontinuation of NSAIDs and opioids
- + Decreased edema and stiffness
- + Decreased scarring
- + Decreased recurrence of injury
- + Increased patient satisfaction
- + Decreased recovery time and subsequent return to work
- + Increased range of motion
- + Faster return to activities of daily living
- + No side effects



Clinical Studies Overview

Over 1200 human clinical trials have been published in peer reviewed journals evaluating the benefits of low level laser therapy (LLLT) or photobiomodulation therapy (PBMT) for arthritis, tendinopathies, sprains, strains, wound healing, fractures, peripheral neuropathies, injured nerves, traumatic brain injuries, temporomandibular joint and numerous other disorders. As a result of these studies, there are 10 clinically proven benefits claims for the BIOFLEX® family of photobiomodulation medical devices.

1. Decreases pain ^{1,3}
2. Decreases inflammation ^{2,6}
3. Increases rate of hyaline cartilage regeneration
4. Increases rate of skeletal muscle fibre regeneration
5. Increases blood flow ⁵
6. Increases angiogenesis and neovascularization
7. Increases stem cell proliferation ⁴
8. Reduces time to recovery ⁶
9. Decreases swelling ⁷
10. Reduces scar tissue formation ⁸

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2. T Walski, K Dąbrowska, A Drohomirecka, N Jędruchiewicz, N Trochanowska-Pauk, W Witkiewicz, M Komorowska. The effect of red-to-near-infrared (R/NIR) irradiation on inflammatory processes. *Int J Radiat Biol.* 2019 Sep;95(9):1326-1336.

3. S GN, Kamal W, George J, Manssor E. Radiological and biochemical effects (CTX-II, MMP-3, 8, and 13) of low-level laser therapy (LLLT) in chronic osteoarthritis in Al-Kharj, Saudi Arabia. *Lasers Med Sci.* 2017 Feb;32(2):297-303.

4. J Nakano, H Kataoka, J Sakamoto, T Origuchi, M Okita, T Yoshimura. Low-level laser irradiation promotes the recovery of atrophied gastrocnemius skeletal muscle in rats. *Exp Physiol.* 2009 Sep;94(9):1005-15.

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6. SR Fisher, JH Rigby, JA Mettler, KW McCurdy. The Effectiveness of Photobiomodulation Therapy Versus Cryotherapy for Skeletal Muscle Recovery: A Critically Appraised Topic. *J Sport Rehabil.* 2019 Jul 1;28(5):526-531.

7. Apostolos Stergioulas. Low-level laser treatment can reduce edema in second degree ankle sprains. *J Clin Laser Med Surg.* 2004 Apr;22(2):125-8. doi: 10.1089/104454704774076181.

8. j Alsharnoubi, ke Shoukry, MW Fawzy, O Mohamed. Evaluation of scars in children after treatment with low-level laser. *Lasers Med Sci.* 2018 Dec;33(9):1991-1995.