

Top Ten Biological Effects of Laser Therapy

Clinical studies and trials of laser therapy technology indicate the following beneficial effects of Low Level Laser Therapy.

1. **Anti-Inflammation.** Low Level Laser therapy creates an anti-edema effect by dilating blood vessels and activating the lymphatic drainage system (which drains swollen areas). This reduces swelling caused by trauma or inflammation.
 2. **Anti-Pain (Analgesic).** Low Level Laser therapy exerts a very beneficial effect on pain in multiple ways. It partially blocks neural transmission of pain signals to the brain. It decreases nerve sensitivity. Laser light also lessens pain by reducing edema. A fourth pain-blocking mechanism involves the production of high levels of pain-killing chemicals such as endorphins, enkephalins and opioids from the brain and adrenal gland.
 3. **Accelerated Tissue Repair and Cell Growth.** Photons of light from lasers penetrate deeply into tissues and accelerate cellular reproduction and growth. The laser light also increases the energy available to the cell by increasing ATP production so that the cell can take on nutrients faster and get rid of waste products. As a result of exposure to laser light, all cells, including the cells of tendons, ligaments and muscles are repaired faster.
 4. **Improved Vascular Activity.** Low Level Laser Therapy significantly increases the formation of new capillaries in damaged tissue, which speeds up the healing process, closes wounds more quickly and reduces scarring. Low Level Laser Therapy also causes vasodilation, an increase in the diameter of blood vessels, which improves the delivery of blood and healing elements to damaged tissues.
 5. **Increased Metabolic Activity.** Low Level Laser Therapy stimulates higher outputs of specific pro-healing enzymes in blood cells, along with improved oxygen and nutrient delivery.
 6. **Trigger Points and Acupuncture Points.** Low Level Laser Therapy stimulates muscle trigger points and acupuncture points on a non-invasive basis, providing musculoskeletal pain relief.
 7. **Reduced Fibrous Tissue Formation.** Low Level Laser Therapy reduces the formation of scar tissue following tissues damaged from cuts, scratches, burns or surgery.
 8. **Improved Nerve Function.** Slow recovery of nerves in damaged tissue and result in impaired sensory and motor function. Low Level Laser Therapy speeds up the process of axonal regeneration and nerve cell reconnection and increases the amplitude of action potentials to optimize muscle action.
 9. **Immunoregulation.** Low Level Laser Therapy directly affects immunity status by stimulating the production of immunoglobulins and lymphocytes and by improving the ease of penetration of white blood cells into damaged tissue.
 10. **Faster Wound Healing.** Low Level Laser Therapy stimulates fibroblast development (fibroblasts are the building blocks of collagen, which is predominant in wound healing) in damaged tissue. Collagen is the essential protein required to replace old tissue or repair tissue injuries. As a result, Low Level Laser Therapy is effective on open wounds and burns.
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