

Understanding the effects of Photobiomodulation

Photobiomodulation, also known as laser therapy and laser biostimulation, is a medical technique in which exposure to laser light enhances tissue growth and healing. The following information will help you understand the effects of **Photobiomodulation** on the body.

Physiological effects:

- Stabilization of cellular membrane of damaged cells
- Enhancement of ATP production and synthesis
- Decreased C-Reactive protein Neopterin
- Acceleration of leukocytic activity
- Enhanced lymphocyte response
- Reduction of Interleukin 1 (IL-1)
- Increased prostaglandin synthesis
- Enhanced superoxide dismutase (SOD) levels
- Stimulation of vasodilation
- Increased angiogenesis (new blood vessels)
- Temperature modulation



K-Laser 6D Portable
Class IV Therapy Laser

Decreased Pain and Nociception:

- Ion channel normalization (results in pain reduction)
- Increase in Beta Endorphins (decreased pain response)
- Increased nitric oxide production (helps oxygenation and synapse normalization)
- Decreased Bradykinin levels
- Blocked depolarization of C-fiber afferent nerves
- Normalization of resting action potentials (back to 70 mv range)
- Increase release of acetylcholine (normalization of nerve function)
- *Axonal sprouting and nerve cell regeneration* (assists in improving nerve function and reducing pain)



Tissue healing:

- Increased leukocyte activity (acceleration of tissue repair and decrease of pain)
- Increased macrophage activity (increased phagocytosis)
- Increased neovascularization (new vessel growth and increase oxygenation)
- Increased fibroblast production (speeds tissue repair)
- Keratinocyte proliferation (Decreased skin healing time and early ephitheliazation)
- Increased tensile strength (helps prevent re-injury)

Normal cells and tissues are not affected!