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Laser Therapy

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Therapeutic laser has recently gained wider acceptance as a treatment for back pain. There are many devices available for physicians and therapists. Devices vary in output power and wavelength of laser light generated. Higher power infrared systems have recently been cleared by the FDA for use in reducing musculoskeletal pain. These higher power systems are classified as class IV lasers with power levels above 500mw.

Certain wavelengths of visible red and near infrared have been shown to promote healing and decrease pain. The wavelengths of laser light most commonly used for therapeutic applications range from visible red 628.5nm, 790nm, 810nm, 830nm, 980nm and 1064nm. There has been a great amount of research surrounding laser use in nerve injury and regeneration. Scientific studies in animals have demonstrated a surprising capacity of infrared laser to promote nerve regeneration, increase muscle mass after denervation and reduce the incidence of postsurgical infection. Infrared laser has been demonstrated to improve the quality of life in patients with chronic myofascial pain syndromes and decrease pain in chronic neck pain patients. The mechanism of laser tissue repair and regeneration is complex and poorly understood. It is most-likely occurring at the mitochondrial level where chromophores are specifically activated by laser wavelengths to increase cellular respiration, DNA/RNA synthesis, ATP production, superoxide dismutase and inhibit inflammatory byproducts. Clinical effects of laser therapy include improved flexibility, reduced musculoskeletal pain, reduced symptoms associated with osteoarthritis and improved local tissue blood flow. There are no known complications of using in post surgical patients and substantial evidence of positive benefit.