Eleven Beneficial Biological Effects of Laser Therapy

1. Pain Management **Key Benefits:**

2. Break the Inflammatory Cycle

3. Tissue Repair/ Healing

faster healing times

Non-pharmaceutical

Anti-inflammatory

Key Effects: 1.Cellular Photostimulation

- Chromophores (mitochondria)
- increased ATP (energy) - improved cell function
- improved cell wall exchanges
- nitric oxide release and others increases cell metabolic activity

2. Myofacial Softening

- muscle relaxation
- improved ROM (joint range of motion)
- softens connective tissue improved tissue elasticity

3.Improved Circulation

- new blood vessel growth
- vasodilation of vessels
- improved lymphatic drainage

decreased swelling/edema more oxygen, nutrient and white cell deliver/waste removal

4. Pain Reduction

- direct action on nerves (blocked depolarization)
- B-Endorphin released
- action potentials fixed
- decreased bradykinins improved quality of life

Secondary Effects:

Cell Repair and Growth

- Accelerated cell growth and reproduction cell /tissue regeneration like tendon, ligament, skin

Decreased Scar Tissue

- reduces its formation - scar tissue remodeling
- increased joint motion and better wound closure

Stimulates Immune System

-stimulates lymphocytes and antibody formation improved immunologic response and defense against infection

Improved Nerve Function

- nerve regeneration and reconnection
- normalizes impulse transmission important in peripheral nerve injury and brain trauma

Increased Wound Healing

- skin cell proliferation
- improved cell migration over a wound
- increases in growth factors
- fibroblast stimulation and collagen production (cell adherence)
- improved vascularity faster healing times

Reduces Inflammation

- accelerates WBC function
- prostaglandin production (prostacyclin PG12)
- reduced Interleukin 2
- temperature modulation
- enhanced Superoxide Dismutase (SOD) levels reduced discomfort and improved function

Stimulates Acupuncture Points

- allows for 'needleless' acupuncture point stimulation
- relief of pain for both acute and latent regional pain relief