



BENEFITS OF RED & NIR LIGHT THERAPY: A to Z

Red & Near InfraRed (NIR) light therapy (aka. Photobiomodulation or LLLTⁱ) reduces inflammation & oxidative stress,ⁱⁱ improves circulation,ⁱⁱⁱ and promotes mitochondrial ATP production to enhance cellular function & repair.^{iv} This amazing combination of effects adds up to many benefits for the entire body:

ANTI-AGING & SKIN REJUVENATION: Red light reduces fine lines & wrinkles^v and sun age-spots.^{vi} Found in many elite Hollywood spas, Red light is the new beauty secret that has the ability to penetrate into all skin layers to rejuvenate tissues, stimulate collagen production,^{vii} reduce inflammation, prompt cellular repair, and increase circulation.

ARTHRITIS PAIN: Red light reduces inflammation to ease joint pain and restore mobility due to osteoarthritis,^{viii} and rheumatoid arthritis.^{ix}

ATHLETIC PERFORMANCE: Red & NIR light increase muscle mass after training and decrease inflammation & oxidative stress in the muscle tissue. This enhances athletic performance & speeds recovery; some scientists think it may give an unfair advantage to competitive athletes.^x

BONE HEALTH: NIR is a non-invasive treatment to assist bone tissue regeneration in bone diseases.^{xi} Research is ongoing regarding improvement of bone density in osteoporosis.^{xii}

BRAIN HEALTH: NIR applied to the head is neuro-protective for brain cells, so studies are ongoing for its ability to slow Alzheimer's and Parkinson's progression.^{xiii} It has also been found to promote neurogenesis after ischemic stroke,^{xiv} and initial studies show benefit for traumatic brain injury.^{xv}

FAT LOSS & CELLULITE REDUCTION: Red light therapy can help with fat loss,^{xvi} for reduction of waist circumference^{xvii} & body contouring.^{xviii} And because Red & NIR light stimulate production of collagen and tightening of elastin, it helps reduce the appearance of cellulite.^{xix}

FATIGUE: Red & NIR light increase the body's energy levels by stimulating ATP production and cellular mitochondrial function, and possibly also by stimulating a sluggish thyroid.^{xx}

FERTILITY (FEMALE): NIR at 830 nm has been studied extensively in Japan,^{xxi} with application on the abdomen, the lower back, and the neck of infertile women, and results found that about 22% achieved pregnancy.^{xxii} One study shows a reversal of PCOS in animal models.^{xxiii}

FERTILITY (MALE): LED Red & NIR light can improve sperm motility,^{xxiv} survival, and speed of movement.^{xxv} Animal models show that it also increases testosterone and sperm formation.^{xxvi}

HAIR REGROWTH: Red light supports the regrowth of hair,^{xxvii} including androgenetic alopecia,^{xxviii} when the light photons energize dormant hair follicles into the active growth stage.

MENTAL HEALTH: NIR light applied directly to the forehead penetrates through the skull to affect the brain; initial studies show benefits for anxiety^{xxix} & depression.^{xxx}

MICROBIOME: Red & NIR light can alter & support the microbiome in a beneficial way.^{xxxi}

MUSCLE & JOINT PAIN: Studies show benefits of Red & NIR for many musculoskeletal pain conditions,^{xxxii} including knee pain,^{xxxiii} osteoarthritis, pain after total hip replacement, fibromyalgia,^{xxxiv} temporomandibular disease, neck pain, and low back pain.

NEUROLOGICAL CONDITIONS: Evidence is emerging that Red & NIR light therapies can benefit chemo-induced neuropathy,^{xxxv} trigeminal neuralgia,^{xxxvi} multiple sclerosis,^{xxxvii} and Parkinson's.^{xxxviii}

SKIN DISORDERS: Red & NIR light effectively treats acne,^{xxxix} psoriasis,^{xl} and atopic dermatitis^{xli} as well as other skin conditions.^{xlii} It also helps to treat keloid scars & fibrotic skin diseases.^{xliii}

SLEEP QUALITY: Red light has been found to effectively enhance sleep quality.^{xliv}

WOUND HEALING: Red light is an effective promoter of wound healing from trauma, surgery or injury.^{xlv} It reduces inflammatory cells, increases proliferation of fibroblasts (to produce tissue) and stimulates collagen synthesis.^{xlvi} In fact, this is how NASA researchers first discovered the healing benefits of LED Red light!^{xlvii}

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